Introduction

The U. S. Fish and Wildlife Service (Service) has reviewed the biological assessment (BA) for the proposed Tongue River Railroad Company's (TRRC) Additional Rail Line From Ashland to Decker, Montana. Your letter dated August 18 requesting formal consultation was received on August 25, 1995. This document represents the Service's biological opinion on the effects of that action on the bald eagle in accordance with section 7 of the Endangered Species Act of 1973, as amended, (16 U.S.C. 1531 et seq.).

This biological opinion is based on information provided in the June 1995 biological assessment, the March 1994 supplement to the draft environmental impact statement (DEIS), the July 1992 (DEIS), numerous meetings with the TRRC representatives and their consultant during the preparation of the biological assessment, field investigations, and other sources of information.

Section 7(b)(3)(A) of the Act requires that the Secretary of Interior issue biological opinions on Federal agency actions that may affect listed species or critical habitat. Biological opinions determine if the action proposed by the action agency is likely to jeopardize the continued existence of listed species or destroy or adversely modify critical habitat. Section 7(b)(3)(A) of the Act also requires the Secretary to suggest reasonable and prudent alternatives to any action that is found likely to result in jeopardy or adverse modification of critical habitat, if any has been designated.

Background-Consultation History

On November 17, 1989, the Interstate Commerce Commission (ICC) published in the Federal Register it's intent to prepare an environmental impact statement (EIS) for the TRRC's proposed construction and operation of a 41-mile rail line between Ashland and Decker, Montana (hereinafter called the TRRC Extension). The TRRC Extension would extend the already approved but not yet built 89-mile rail line from Miles City to Ashland, Montana. The primary purpose of the TRRC Extension would be to allow the shipment of coal from operating mines near Decker, Montana north to the previously approved Terminus Point 1 near Ashland.

As stated in the biological assessment, on December 28, 1989 the Service provided a species list to the ICC indicating that three species, all listed as endangered, could potentially occur in the area to be affected by the TRRC Extension (Palawski, 1989): 1) the bald eagle (*Haliaeetus leucocephalus*) could nest along the Tongue River, and could occur as a migrant and winter resident 2) the peregrine falcon (*Falco peregrinus*) could occur as a migrant; and 3) the black-footed ferret (*Mustela nigripes*) could occur in black-tailed prairie dog (*Cynomys ludovicianus*) colonies. On November 10, 1994 the USFWS added the pallid sturgeon (*Scaphirhynchus albus*), which could occur in the lower Tongue River, to this list (McMaster, 1994).

Following discussions between the ICC and the Service, the ICC requested Historical Research Associates (HRA) to submit a copy of the first draft of the biological assessment to the Service to review in mid-January, 1995. This was followed by a February 2, 1995 meeting between the Service, WESTECH and TRRC personnel to discuss revisions to the first

draft. A second draft was submitted to the Service on March 3, 1995. On March 24, 1995 the Service, TRRC and WESTECH personnel discussed revisions to the second draft during a conference call. At that time it was apparent that concerns regarding all species except the bald eagle had been resolved. A third draft of the bald eagle portions of the biological assessment was submitted to the Service on April 11 and discussed during a meeting on April 13, 1995. A fourth draft of the bald eagle section was then written. Between April 18 and May 11, 1995 TRRC, HRA and WESTECH asked several members of the Montana Bald Eagle Working Group (MBEWG) to review the fourth draft, and for recommendations regarding the bald eagle.

The Service reviewed the final biological assessment and submitted comments to the ICC in a letter dated July 12, 1995. The Service did not concur with the conclusion reached by the ICC in its biological assessment that the proposed action would not adversely affect the bald eagle. The Service did concur with the "no effect" determination on the peregrine falcon, pallid sturgeon and the black-footed ferret. On August 18, 1995, the ICC requested formal consultation. The Service has examined the proposed action in accordance with the procedural regulation governing cooperation under Section 7 of the Endangered Species Act of 1973, as amended (Act) (50 CFR 402 and U. S. C. 1531 et seq). The overall environmental acceptability of the proposed action was addressed in our May 4, 1994 and August 29, 1991 letters and is not considered in this opinion.

Description of the Proposed Action

The proposed action being considered in this formal consultation is the construction of an additional rail line adjacent to the Tongue River from Ashland to Decker, Montana. The alignment generally parallels the Tongue River from Ashland to the confluence of Four Mile Creek. This portion of the project is located in fairly open range land. The portion of the alignment from Four Mile Creek to the Tongue River Dam (about 10 miles) is located in a much narrower canyon and would require the construction of 5 bridges over the Tongue River and one tunnel. The track would be comprised of 136-pound continuous welded rail on treated hardwood ties, resting on 12 inches of ballast and 15 inches of sub-ballast. The right-of-way (ROW) would vary between 75 and 300 feet in width, and would average 200 feet. Facilities associated with the rail line would include road and railway crossings, culverts, cattle passes, signal and communication facilities, etc.

Current Status of the Bald Eagle

In 1978 there were only 12 breeding areas for bald eagles known in Montana (Servheen 1978). As of autumn 1995, 222 current or historical breeding areas were known in Montana. Montana is included in the seven-state Pacific Bald Eagle Recovery Area. The primary recovery objectives for this area are to provide secure habitat for bald eagles and increase populations in specific geographic areas to levels where it is possible to delist the species. Delisting should occur on a region-wide basis and should be based on the following criteria: (1) a minimum of 800 pairs nesting in the seven-state recovery area; (2) these pairs should annually produce an average of at least 1.0 fledged young per pair, with an average success rate per occupied site of not less than 65% over a

five-year period; (3) population recovery goals must be met in at least 80% of the management zones that have nesting potential; and (4) a persistent, long-term decline in any sizeable (greater than 100 eagles) wintering aggregation would provide evidence for not delisting the species (USFWS, 1986). In 1994, there were 1192 occupied territories reported with 1.03 young per occupied territory within the Pacific Bald Eagle Recovery Area. The number of occupied territories has consistently increased since 1986 and exceeded 800 for 5 years beginning in 1990 when 861 were reported. Based in part on the above information, the bald eagle has since been reclassified from endangered to threatened effective August 11, 1995; (60 FR 36001-36010).

The Pacific Bald Eagle Recovery Plan (USFWS, 1986) uses the zone approach to differentiate subpopulations and habitat important to bald eagle recovery in the Pacific recovery area. The management zone approach is central to the recovery process because establishment of well-distributed bald eagle populations and habitats is essential for recovery of the species in the recovery area.

There are seven bald eagle management zones in Montana. The proposed action is located in Management Zone 41 which includes the Tongue River drainage. Presently, there are 19 breeding pairs in Zone 41 (Flath pers comm). Bald eagle breeding populations have been increasing in recent years and are nearing the recovery goals set in the recovery plan (USFWS 1986). The bald eagle was downlisted to threatened status on July 12, 1995.

Nesting chronology, although variable, is well documented for bald eagles in Montana (USFWS 1986). Bald eagles are extremely sensitive to disturbance during nest building, egg laying, and incubation periods (Feb. 1 through April 30). Bald eagles are most likely to desert nest sites during this period if disturbed.

Environmental Baseline

Under the provisions of section 7(a)(2), when considering the "effects of the action" on listed species, the Service is required to consider the environmental baseline. The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area (50 CFR 404.02), including Federal actions in the area that have already undergone section 7 consultation.

The project area is influenced mainly by hydrology changes caused by the Tongue River Dam which has limited the magnitude and frequency of flooding which results in less scouring of river banks necessary for cottonwood regeneration. Periodic channel migrations accompanied by erosion of streambanks and deposition of alluvial material to form sandbars is essential to the maintenance of riparian cottonwood communities. Cottonwoods require nonvegetated, recently deposited alluvium for successful seed germination and establishment. Seeds germinate within 48 hours and must have a continuous supply of moisture for several weeks. On-going ranching practices have also resulted in clearing of cottonwoods for alfalfa crops and in combination with grazing practices keep most cottonwood seedlings from becoming established. Other projects in the immediate area (upstream of the Tongue River Dam) which have significantly altered the landscape include the Decker and Spring Creek coal mines.

The Service believes that the current status of the bald eagle in the project area is already impacted by the above mentioned projects. The habitat and prey base for the bald eagle have been negatively impacted by those actions and will be further impacted by the construction of the proposed railroad. The environmental baseline currently includes 3 nest sites with one active nest which fledged one bird in 1995.

As stated in the Biological Assessment; "Bald eagles occur along the Tongue River as migrants and winter residents. They forage on fish, waterfowl, carrion, etc. During migration as many as 50 bald eagles have been counted along the Tongue River from Miles City to the upper end of the Tongue River Reservoir (Farmer, 1992).

The value of the river immediately below the Tongue River Dam to attract migrant and wintering bald eagles has been recognized (e.g., Lockhart and McEneaney, 1978). It is estimated that an average 10-15 bald eagles winter along the river below the dam (USFWS, 1992).

In the mid-1980's, a pair of bald eagles exhibited pair-bonding activity near a nest (this nest will be referred to as Nest 01) in a cottonwood tree along the Tongue River about 2.5 miles below the dam. No egg-laying occurred and in subsequent years this nest was used by golden eagles (USFWS, 1992).

In spring 1992 a pair of bald eagles established a nest (Nest 02, Figure 1) in a cottonwood tree about eight miles downstream from the dam (Harms, 1992). In the past few years Nests 01 and 02 were apparently used interchangeably by the same pair of bald eagles (Flath, pers comm). In spring 1994 Nest 01 was occupied by bald eagles but was destroyed in a windstorm; Nest 02 was not occupied. It was expected that there would be a good probability that these bald eagles would construct a new nest somewhere downstream from the dam, or would reoccupy Nest 02 (Flath, pers comm). It appears that this assumption was correct, as a great blue heron nest about two miles downstream from the dam was occupied in March 1995; this new nest will be referred to as Nest 03.

Another pair of bald eagles was observed in the vicinity of Nest 02 in March 1995. Nest 02 may have also been destroyed, as it could not be located in March 1995 (John Berry, biologist, Kiewit Mining Group, Sheridan, Wyoming, personal communication, May 1, 1995). This second bald eagle pair therefore apparently does not have a nest but may yet build one (Flath, pers comm).

Loss of bald eagle nests is not uncommon. In Montana, an average of seven percent (range 3-15 percent) of all bald eagle nests are lost each year; the continent-wide nest turnover rate is also seven percent (range 5-20 percent). Thus, while certain nests may remain active for many years, it is not unusual for the location of a nest site within a bald eagle nesting territory to change (Flath, pers comm).

In addition to the nests in the vicinity of the TRRC Extension, bald eagles have also successfully nested along the Tongue River upstream from the Tongue River Reservoir (Phillips et al., 1990) and downstream between Ashland and Miles City (ICC, 1992). Both these nests are also in cottonwood trees."

Direct Effects

The Service believes that the combination of potential construction and operation disturbances would likely have direct effects on the bald eagle and their habitat.

The Montana Bald Eagle Management Plan (MBEWG, 1994) summarized the reaction of bald eagles to human activities as:

> Bald eagles are sensitive to a variety of recreational, research, resource and urban development activities. Responses of eagles may vary from ephemeral, temporal and spatial avoidance of activity to total reproductive failure and abandonment of breeding areas. Less adequately documented is that bald eagles also tolerate apparently significant disturbances. Relationships of human activity and eagle responses are highly complex, difficult to quantify, and often site-specific. Responses vary depending on type, intensity, duration, timing, predictability and location of human activity. The way in which these variables interact depends on age, gender, physiological condition, sensitivity, residency and mated status of affected eagles. Prey base, season, weather, geographic area, topography and vegetation in the vicinity of activities and eagles (plus other variables probably unperceived by humans) also influence eagle responses. Cumulative effects of many seemingly insignificant or sequential activities may result in disruption of normal behavior. Lack of experimental data (due to endangered/threatened status) limits quantification of response to empirical evidence, but general trends in eagle responses (or lack thereof) to human activity are becoming evident to field researchers and managers, although somewhat subjectively. Clearly, some bald eagles are more tolerant of human activity than others. Tolerance threshold is usually site, pair, and activity specific and a function of type, intensity, and proximity of disturbance over exposure time. However, it is becoming apparent that there are "urban" and "rural" eagles. Urban eagles may be more tolerant of certain human activities than their rural counterparts because they have been or are exposed to more human activity at gradually increasing levels while rural eagles' exposure is abrupt.

The Montana Bald Eagle Management Plan (MBEWG 1994) defined disturbance, as used above, to be "any human elicited response that induces a behavioral or physiological change in a bald eagle contradictory to those that facilitate survival and reproduction. Disturbance may include elevated heart or respiratory rate, flushing from a perch or events that cause a bald eagle to avoid an area or nest site."

Based on the above descriptions, it is reasonable to assume that bald eagles nesting along the Tongue River in the vicinity of the TRRC Extension would be accustomed to some level of disturbance related to use of the county road (which passes within 800 feet of Nest 01, within 200 feet of Nest 03, and within 1/2-mile of Nest 02 (Figure 1)), residences, agricultural activities such as hay production and feeding livestock, and limited recreational use of the Tongue River. It is also reasonable to assume that the construction and operation of a railroad in the project area is going to cause considerably more disturbance particularly at the nest site than the birds in the vicinity are accustomed to. Responses of eagles may vary from ephemeral, temporal and

spatial avoidance of activity to total reproductive failure and abandonment of breeding areas. Less adequately documented is that bald eagles also tolerate apparently significant disturbances. Relationships of human activity and eagle responses are highly complex, difficult to quantify, and often site-specific. Responses vary depending on type, intensity, duration, timing, predictability and location of human activity. The Service believes that the combination of construction and operational disturbances is likely to exceed the tolerance of the birds particularly since the railroad will be in such close proximity to nest 03 (approximately 1000 feet). The intensity and duration of disturbances will be much greater than the birds are accustomed to. Although birds are less likely to desert nest sites when disturbed during hatching, rearing and fledging periods (May 1 through August 15), care should be exercised to minimize disturbance (USFWS 1986). The Service believes that the combination of construction and operational disturbances may cause the eagles to abandon nest 03. Monitoring will help determine the short term affects of construction activities, but will not alleviate the potential long term operational impacts. Nesting habitat enhancement and prey base enhancement are appropriate measures to help off-set long term impacts to the population but do not remove or eliminate the potential to incidentally take eagles associated with nest 03.

The effects of the proposed project on the habitat would include removal of some of the riparian vegetation that serves as perch, screening, foraging, and potential nesting vegetation from the riverbank in the project area. Another significant direct effect to the eagle includes possible train strikes of adult birds during the operational phase. Monitoring may help minimize short term direct affects during construction, but will not alleviate the potential long term operational impacts. Nesting habitat enhancement and prey base enhancement are other appropriate measures to help off-set long term direct impacts.

Indirect Effects

Indirect effects of the proposed action include such things as temporary displacement of prey due to disturbance from passing trains or construction and maintenance activities. Such disturbance can potentially disrupt breeding and feeding activities.

Cumulative Effects

Cumulative effects are those effects of future non-Federal (State, local government, or private) activities on endangered and threatened species or critical habitat that are reasonably certain to occur during the course of the Federal activity subject to consultation. Future Federal actions are subject to the consultation requirements established in section 7 of the Act and, therefore, are not considered cumulative to the proposed action.

The continued fragmentation of habitat and loss of riparian vegetation due to vegetation removal may eventually affect the eagles ability to adequately use the prey base or other important habitat features. The Montana Bald Eagle Management Plan emphasized that even though the bald eagle populations have increased in recent years, the continued alteration and removal of suitable habitat due to human activities may affect the long-term recovery of the bald eagle in Montana.
The Service does not believe that the direct, indirect and cumulative

effects of the proposed project would reduce appreciably the likelihood of both survival and recovery, or alter appreciably the habitat of the Pacific Bald Eagle Population in the wild by reducing the reproduction, numbers, or distribution of the species.

As stated in the biological assessment, reasonably foreseeable related and unrelated actions, and cumulative effects would include: 1) assuming construction of the already approved rail line from Miles City to Ashland, other bald eagle nests along the Tongue River could experience effects similar to those of the TRRC Extension. As noted earlier, there is only one known bald eagle nest in the vicinity of this route; 2) development of 2-3 coal mines in the Ashland area would not affect bald eagles, since no nesting sites have been identified which would be disturbed; 3) an increasing human population in the region could result in displacement, accidental mortalities, or increased illegal killing of bald eagles; and 4) if the Tongue River Dam Rehabilitation Project interrupts flows in the Tongue River or radically changes water levels in the Tongue River Reservoir, it could affect use of these waters by prey species such as waterfowl and shorebirds.

Conclusion

After reviewing the current status of the bald eagle, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that the proposed construction of an additional rail line adjacent to the Tongue River from Ashland to Decker, Montana, is not likely to jeopardize the continued existence of the Pacific states bald eagle population. No critical habitat has been designated for the bald eagle. Thus, the proposed action will not destroy or adversely modify any designated critical habitat of this species.

Incidental Take

The regulations that govern the Section 7 consultation process published in the Federal Register of June 3, 1986 address incidental take of listed species that may occur as a result of implementing an action (50 CFR S402.14(i)). Section 9 of the Act makes it unlawful for any person to "take" an endangered species. As defined by the Act, the term "take" means to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct" 10 U.S.C. 1532(19). Further, "harm" is defined to include "an act ...[that] may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavior patterns including breeding, feeding, or sheltering" (50 C.F.R. 17.3). "Harass" in the definition of "take" in the Act means "an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering." However, under the terms of Section 7(b)(4) and Section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered taking within the bounds of the Act provided that such taking is in compliance with an incidental take statement in the biological opinion.

The Service anticipates that the proposed project will likely result in the incidental take of bald eagles due to the loss of nestlings as a result of nest abandonment during incubation or premature fledging.

Additionally, we believe mortalities may result from train strikes while birds are feeding on carrion. Discussions with USFWS law enforcement personnel also confirm that eagles have been killed by train strikes (Mann, pers comm). Therefore, the Service anticipates that two eagles may be incidentally taken during construction and one eagle taken every two years during operations of the TRRC Extension.

Nest 03 was successful last year and fledged one bird. The rationale for establishing the incidental take at 2 eagles during the construction phase is based on the fact that the mean brood size for Montana is 2 and initially the most likely incidental take would involve the loss of one years production from that nest through abandonment by the adults during incubation or premature fledging of young birds.

It is also expected that the eagles may move the nest farther from the railroad tracks. Preliminary evaluation of existing eagle nests indicates that there are very few successful nests within 1/4 mile of existing railroad tracks. After construction the most likely cause for incidental take will be a strike by a train. We note that the proposed removal of carrion from the immediate vicinity of the railroad tracks is likely to reduce the potential of rail strikes, but still doesn't remove the potential. The above mentioned measures to enhance nesting habitat and enhance the prey base are actions that would benefit eagles in the long term and help offset potential negative impacts to the eagle population.

The incidental take statement provided in this opinion satisfies the requirements of the Endangered Species Act, as amended. This statement does not constitute an authorization for take of listed migratory birds under the Migratory Bird Treaty Act, the Bald and Golden Eagle Protection Act, or any other Federal statute.

Reasonable and Prudent Measures

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take:

1. Monitor nest activities to detect disturbance and halt any activities that disturb birds.

2. Schedule planned maintenance activities in such a way as to minimize effects to migrant and breeding bald eagles along the TRRC Extension route, and to reflect the actual chronology of bald eagle use of the Tongue River valley. Provide for appropriate responses to train derailments to minimize the potential effect of hazardous material spills in bald eagle habitat, particularly the potential to the aquatic-oriented prey base (fish and waterfowl).

3. Conduct aerial surveys of the Tongue River from its confluence with the Yellowstone River to the upper end of the Tongue River Reservoir (approximately Decker, Montana) which will be flown in December, January and February.

4. Remove carrion from the rail line in such a manner as to eliminate or minimize the potential for mortalities of bald eagle from train strikes, while retaining this carrion as a potential food source.

5. Adjust the TRRC Extension construction schedule to reflect the actual bald eagle nesting season on the Tongue River.

Terms and Conditions

The TRRC has developed a bald eagle monitoring program with specific monitoring elements. The Service believes that these monitoring elements are necessary to implement the above reasonable and prudent measures and thus serve as terms and conditions for this incidental take statement. In order to be exempt from the prohibitions of section 9 of ESA, the ICC must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. Monitor nest activities to detect disturbance and halt any activities that disturb birds. A site-specific bald eagle habitat management plan will be prepared for nest site 03 or any other current bald eagle nest within one year prior to the start of construction (appendix VII of the Montana Bald Eagle Management Plan contains an outline of the recommended steps for developing a management plan). The TRRC has developed and agreed to do specific monitoring as follows:

a. Two years prior to construction of the TRRC Extension, TRRC will survey the Tongue River valley along the Extension route for the presence of nesting bald eagles. Any active or inactive bald eagle nests will be reported immediately to the USFWS . Assuming access to a nest site is available, the ground below active nests will be surveyed during the post fledging period for evidence revealing the food habits of the eagles at this site. Such information might be useful in defining the threshold limits discussed below.

b. A program to monitor each active nest for 2 years prior to and during construction will be developed through on-site consultation with the USFWS. The primary objective of monitoring would be to determine nest site management zones per the Montana Bald Eagle Management Plan (1994) and to determine if approaching construction activities have a negative effect on nesting bald eagles. USFWS consultation would be expected to define, on a nest-by-nest basis, the kind and amount of overt disturbance behavior exhibited by nesting bald eagles that would indicate that construction activities should be halted (henceforth called "threshold behavior"). It is expected that parameters influencing the determination of threshold behavior would include, but not be limited to, location of the nest in relation to the TRRC Extension route, distance from other human disturbances such as the county road, and known history of the nesting birds. It is expected that the threshold behavior value would vary, depending on the time of the nesting period (e.g., egg laying vs. rearing).

c. Persons assigned to monitor active bald eagle nests (henceforth called "environmental inspectors") would have the authority to immediately halt TRRC Extension construction activities in the vicinity of an active nest when the threshold behavior is exhibited by the nesting birds. This authority would be granted as part of contract

specifications between TRRC and the construction contractor. The environmental inspector would notify the on-site construction supervisor that construction activities must cease. The on-site construction supervisor would be responsible for notifying construction crews to cease activities in the vicinity of the nest.

d. In the event of a construction halt, the environmental inspector would notify USFWS. USFWS would evaluate the situation and make a recommendation to halt construction activities until a later date, proceed with certain kinds of activities, etc.

2. Within the framework of the above monitoring plan (Term & Condition #1), the following TRRC Extension construction activities could occur:

a. There would be no construction activities within Management Zones 1 and 2 at any active bald eagle nest during the nesting period (February 1 - August 15, or until five days after the first observation of independent flight).

b. Low intensity activities, such as surveying, could occur in Management Zone 3 beyond line of sight of any active nest from February 1 to May 1 (i.e., courtship through initiation of hatching). High intensity activities (heavy equipment operation, grading, etc.) would not occur in Management Zone 3 around any active nest during this period.

c. Once monitoring confirms that hatching has occurred (any time after May 1), low intensity activities could occur anywhere within Zone 3 of any active nest. High intensity activities would be confined to those portions of Management Zone 3 beyond line of sight of an active nest.

d. Once monitoring confirms that fledging has occurred (i.e., five days following the first observation of independent flight), high intensity activities could occur anywhere within Management Zones 1, 2 and 3.

3. The following measures would be implemented during operation of the TRRC Extension:

a. Rail line maintenance activities would fall into two general categories. The first would be comprised of non-emergency or planned activities, and would not take place in Management Zones 1 or 2 from February 1 through May 15. After May 15 until the first observation of independent flight of the fledglings (usually no later than August 15), these activities will occur in the afternoons. By afternoon, adult eagles have usually completed feeding the chicks and there would be minimal disruption of this activity.

b. Certain planned maintenance activities, such as routine inspections of the rail line, would necessarily have to

occur during the February 1 - May 15 period. However, these activities would be expected to be short-term and low intensity, and would be anticipated to have minimal effects to bald eagles.

c. The second category of maintenance activity would be emergency maintenance or repairs. Such activities cannot be foreseen and therefore cannot be planned to occur in periods that would minimize the effect to nesting bald eagles. The degree of effect to nesting bald eagles would be influenced by the magnitude of the activity, the time of the nesting season at which the activity occurs, and the tolerance for disturbance displayed of the affected bald eagles. TRRC will notify USFWS as soon as reasonably possible of any emergency maintenance activity within Management Zones 1 or 2 around an active bald eagle nest.

d. Planned maintenance activities, except regularly scheduled rail inspections, will not take place in Management Zones 1 or 2, or in Management Zone 3 within 1.5 miles of any active bald eagle nest, from February 1 (onset of courtship and nest building) until two weeks after hatching. After May 15 until the first observation of independent flight of the fledglings (usually no later than July 15), these activities will occur in the afternoons, if necessary. By afternoon, adult eagles have usually completed feeding the chicks and there would be minimal disruption of this activity. After fledging occurs, planned maintenance activities could occur anywhere within Management Zones 1, 2 and 3. The actual dates of hatching and fledging will be determined by monitoring each active nest, as discussed in the Biological Assessment.

e. Planned maintenance activities would continue anywhere along the TRRC Extension route in the Tongue River valley until late October-early November (arrival of migrant bald eagles). The arrival date will be determined yearly through consultation with the Montana Bald Eagle Work Group (MBEWG). Since wintering bald eagles are sensitive to disturbance at roost sites and during foraging (Harmata 1982; McGarigal 1988; MBEWG 1994; Stalmaster and Newman 1978), planned maintenance activities near these sites could be curtailed to minimize disturbance.

f. Certain planned maintenance activities, such as routine inspections of the rail line a minimum of two times per week, would necessarily have to occur yearlong, including during the February 1 - May 15 nesting period. Routine inspection trips will also be used to remove carrion from the rail line. These activities are expected to be of short duration, few in number, usually below the level of nests or roosts, and comparatively quiet. Therefore they are anticipated to have minimal effects to nesting, nonbreeding or wintering bald eagles (Grubb and King 1991; Steenhof 1978). Moreover, routine activity that occurs twice a week will be predictable to eagles.

g. TRRC will notify USFWS immediately of a major emergency maintenance activity that might result in prolonged

disturbance to bald eagles, to determine if additional monitoring of the eagles would be needed.

h. TRRC employees engaged in routine inspection of the rail line (a minimum of two times per week) will remove train-killed deer or other large animals from the right-of-way, in order to protect wintering bald eagles feeding on such carrion, from mortalities by trains. Carrion will either be completely removed from the vicinity of the rail line, or will be placed at locations along or near the right-of-way where there would be no potential for mortalities from trains, per objective 1.3123 of the Pacific Bald Eagle Recovery Plan (USFWS, 1986).

(i). TRRC will prohibit trapping within its ROW. This measure would ensure that bald eagles are not accidentally caught in traps set for other animals.

The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize incidental take that might otherwise result from the proposed action. With implementation of these measures the Service believes that no more than two eagles during construction or 1 eagle per 2 years during operation will be incidentally taken. If, during the course of the action, this minimized level of incidental take is exceeded, such incidental take represents new information requiring review of reasonable and prudent measures provided. The ICC must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

Conservation Recommendations

Sections 2(c) and 7(a)(1) of the Act direct Federal agencies to use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. The term "conservation recommendations" has been defined as Service suggestions regarding discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding development of information. The recommendations provided here relate only to the proposed action and does not necessarily represent complete fulfillment of the agency's section 7(a)(1) responsibility for the species.

The following Conservation Recommendations are taken directly from the "white papers" that the TRRC has agreed to and submitted to the ICC on October 4, 1995. The "white papers" contain additional discussion and strategy on how these recommendations will be accomplished(appendix A).

1. TRRC (in consultation with the MBEWG and/or USFWS) would identify tracts of land along the TRRC Extension route and in neighboring tributaries for purchase for management as nesting waterfowl habitat.

2. TRRC (in consultation with the MBEWG and/or USFWS) would identify tracts of land along the TRRC Extension route and in neighboring tributaries for purchase for management as potential bald eagle nesting habitat.

Reinitiation Requirement

This concludes formal consultation on this action as outlined in your August 18, request. As required by 50 CFR 402.16, reinitiation of formal consultation is required if:

1. the amount or extent of incidental take is exceeded;

2. new information reveals effects of the agency action that may affect listed species or habitat in a manner or to an extent not considered in this opinion;

3. the agency action is subsequently modified in a manner that causes an effect to the listed species or habitat not considered in this opinion; or

4. a new species is listed or critical habitat designated that may be affected by the action.

In instances where the amount or extent of incidental take is exceeded, any operations causing such take must be stopped in the interim period between the initiation and completion of the new consultation if any additional taking is likely to occur.

11-22-95

ACTING Kemper M. McMaster — Date
Field Supervisor
Montana Field Office
U.S. Fish and Wildlife Service

Literature Cited

Anderson, S.H. and C.T. Patterson. 1988. Characteristics of bald eagle winter roosts in Wyoming. Prairie Natur. 20(3): 147-152.

Bowerman, W.W. IV, T.G. Grubb, A.J. Bath, J.P. Giesy Jr., G.A. Dawson and R.K. Ennis. 1993. Population composition and perching habitat of wintering bald eagles, *Haliaeetus leucocephalus*, in northcentral Michigan. Canadian Field-Natur. 107(3): 273-278.

Chester, D.N., D.F. Stauffer, T.J. Smith, D.R. Luukkonen and J.D. Fraser. 1990. Habitat use by nonbreeding bald eagles in North Carolina. J. Wildl. Manage. 54: 222-234.

Elser, A.A., R.C. McFarland and D. Schwehr. 1977. The effect of altered streamflow on fish of the Yellowstone and Tongue Rivers, Montana. Old West Reg. Comm. Rep. 8, Yellowstone Impact Study.

Farmer, P.J., biologist, Western Technology and Engineering, Inc. February 23, 1992. Letter to Alan Newell, Historical Research Associates, Inc.

Grubb, T.G. 1980. An artificial bald eagle nest structure. USDA For. Serv. Res. Note RM-383.

Grubb, T. G. , King, R. M. 1991. Assessing Human Disturbance of Breeding Bald Eagles With Classification Tree Models. J. Wildl. Manage. 55(3):500-511

Hansen, P.L., R.D. Pfister, K. Boggs, B.J Cook, J. Joy and D.K. Hinckley. 1995. Classification and management of Montana's riparian and wetland sites. Univ. Montana School of For., Montana For. and Conserv. Exp. Sta., Misc. Publ. No. 54.

Harms, D., state supervisor, Montana state office, U.S. Fish and Wildlife Service, fish and Wildlife Enhancement. August 29, 1991. Letter to E.K. Kaiser, chief, Section of Energy and Environment, Interstate Commerce Commission.

Harms, D., state supervisor, Montana state office, U.S. Fish and Wildlife Service, Fish and Wildlife Enhancement. December 24, 1991. Letter to E.K. Kaiser, chief, Section of Energy and Environment, Interstate Commerce Commission.

Harms, D., state supervisor, Montana state office, U.S. Fish and Wildlife Service, Fish and Wildlife Enhancement. April 28, 1992. Letter to N. Stessman, acting regional director, U.S. Bureau of Reclamation, Billings, Montana.

Harmata, A.R. 1982. Behavior and ecology of wintering and migrant bald eagles in the Rocky Mountains. Job completion report, Montana Dept. Fish, Wildl. and Parks.

Interstate Commerce Commission. 1992. Draft environmental impact statement, Finance Docket No. 30186 (Sub-No.2), Tongue River Railroad Company - construction and operation of an additional rail line from Ashland to Decker, Montana. Interst. Commerce Comm., Section of Energy and Environ., Washington, D.C.

Interstate Commerce Commission. 1994. Supplement to draft environmental impact statement, Finance Docket No. 30186 (Sub-No.2), Tongue River Railroad Company - construction and operation of an additional rail line from Ashland to Decker, Montana. Interst. Commerce Comm., Section of Environ. Anal., Washington, D.C.

McGarigal, K. 1988. Human-eagle interactions on the lower Columbian River. M.S. thesis, Oregon St. Univ.

McMaster, K.M., field supervisor, Montana field office, U.S. Fish and Wildlife Service, Ecological Services, Helena, Montana. November 10, 1994. Letter to Alan Newell, Historical Research Associates, Inc.

Montana Bald Eagle Working Group (MBEWG). 1994. Montana bald eagle management plan. USDI Bur. Recl., Billings, Montana. 104 pp.

Newell, A., Historical Research Associates, Inc. December 17, 1991. Letter to D. White, Section of Energy and Environment, Interstate Commerce Commission.

Palawski, D. for K. McMaster, field supervisor, Montana office, U.S. Fish and Wildlife Service, Fish and Wildlife Enhancement. December 28, 1989. Letter to Dana White, Section of Energy and Environment, Interstate Commerce Commission.

Phillips, R.L., A.H. Wheeler, J.M. Lockhart, T.P. McEneaney and N.C. Forrester. 1990. Nesting ecology of golden eagles and other raptors in southeastern Montana and northern Wyoming. U.S. Fish and Wildl. Serv., Fish and Wildl. Tech. Rep. 26, Washington, D.C.

Servheen, C.S. 1978. The status of the bald eagle in Montana. Unpubl. Rept., Univ. of Montana, Missoula. 4 pp.

Stalmaster, M.V. and J.R. Newman. 1978. Behavioral responses of wintering bald eagles to human activity. J. Wildl. Manage. 42: 506-513.

Steenhof, K. 1978. Management of wintering bald eagles. U.S. Fish and Wildl. Serv. Off. Biol. Serv. FWS/OBS-78/79.

USDI Bureau of Reclamation, Northern Cheyenne Tribe and Montana Department of Natural Resources and Conservation. 1995. Tongue River Basin Project Draft Environmental Impact Statement.

U.S. Fish and Wildlife Service. 1986. Recovery Plan for the Pacific bald eagle. U.S. Fish and Wildl. Serv., Portland, Oregon.

U.S. Fish and Wildlife Service. 1992. Fish and Wildlife Coordination Act report for the Tongue River Dam rehabilitation project. Montana state office, Helena.

U. S. Fish and Wildlife Service, Federal Register, 50 CFR Part 17,Wednesday July 12, 1995, Endangered and Threatened Species; Bald Eagle Reclassification; Final Rule 36000-36010

APPENDIX A. WHITE PAPERS

MAINTAIN/ENHANCE HABITAT INTEGRITY

Assumptions

The following assumptions are made for the purposes of this discussion:

- "Habitat" refers to nesting, roosting and perching sites comprised of riparian forest (primarily cottonwood *Populus deltoides*) along the Tongue River valley. This is a more limited definition than used in the Montana Bald Eagle Management Plan (MBEWG 1994). Other components of habitat, such as prey base, will be addressed in separate discussions.

  It is recognized that bald eagles may perch diurnally and may roost in trees (probably ponderosa pine *Pinus ponderosa*) in upland areas away from the Tongue River (e.g., Anderson and Patterson 1988), but such sites should not be affected by a rail line placed in the river valley.

- "Perch" sites refer to trees or other structures (cliffs, rock outcrops, poles, etc.) used by bald eagles during the day (MBEWG 1994), particularly when foraging along the Tongue River. It is expected that the most desirable perch sites will be close (<30 m) to the river bank (Steenhof et al. 1980). Perch trees may be larger and have greater DBH than neighboring trees (Bowerman et al. 1993) but are often shorter and smaller than roost trees (Steenhof 1978). Proximity to food sources (in this case, areas along the Tongue River that may concentrate prey species including fish and waterfowl, such as below dams, above and below large riffles, at oxbows or adjacent wetlands, etc.) may also be a criterion in perch site selection (Steenhof 1978).

- "Roost" sites refer to trees used overnight, perhaps communally (MBEWG 1994). Roost trees generally consist of large trees in dense stands with a more open understory than neighboring trees; well protected from the wind; located near the edge of the stand for ease of approach and entry, and perhaps as an aid in thermoregulation; yet well concealed from nearby areas of human activity (Chester et al. 1990; Harmata, 1982; Steenhof 1978; Steenhof et al. 1980).

- "Nest" sites refer to trees, cliffs, artificial structures, etc. used for nesting (MBEWG 1994). The most desirable nest trees along the Tongue River will generally be large cottonwoods.

- The target species of this discussion is cottonwood. Other, later successional species in the riparian forest (Hansen et al. 1995), such as green ash (*Fraxinus pennsylvanica*) and boxelder (*Acer negundo*), may be present in the forest and

may be used, if appropriately placed, as perch sites by bald eagles but are less desirable for bald eagle roost and nest sites because of their shorter height and less substantial structure.

Objective

- Maintain or enhance cottonwood stands for bald eagle perch, roost and nest sites along the Tongue River in the vicinity of the Tongue River Railroad Company's (TRRC) proposed 41-mile rail line between Ashland and Decker, Montana (hereinafter called the TRRC Extension).

Problems

- It is assumed that the Tongue River Basin Project would result in the continuing decline of mature cottonwood stands along the Tongue River (USBR et al. 1995), due to regulated flows which will reduce or eliminate the alluvium deposition necessary to establish new stands (Hansen et al. 1995), as well as continue to limit the intensity of periodic high flows and flood events, which alter stream courses by creating meanders and oxbows and therefore change the successional stages of riverbank vegetation.

- Current land uses (primarily agricultural uses for hay production and livestock grazing) limit the amount of land available for riparian forest and may affect the vegetation succession within any given stand.

Strategy

As discussed in the Biological Assessment (BA) for the TRRC Extension, TRRC (in consultation with the Montana Bald Eagle Working Group (MBEWG)) could identify tracts of land along the TRRC Extension route for purchase for management as bald eagle habitat. Criteria to be used to select such tracts could include:

- location near irrigation dams, natural riffle/run sequences, oxbows, etc. that would concentrate prey (fish and waterfowl);

- location in areas that would be "severed" by construction of the railroad. This would have two advantages: a) landowners who would otherwise have difficulty accessing these sites for agricultural management due to the railroad, might be receptive to selling such sites for wildlife management purposes; and b) isolating such sites with the railroad grade from other human disturbances might improve their attractiveness for less tolerant bald eagles; and

- presence of appropriately sized and aged stands of cottonwoods that would be available, or would have the potential to eventually develop as perch, roost or nest sites for bald eagles. Cottonwood trees would not necessarily have to be present, if the site could potentially be vegetated through plantings or other efforts with cottonwoods.

Tracts would be selected by reviewing aerial photos of the TRRC Extension route along the Tongue River valley. Potential sites would be identified and prioritized based on the above criteria. In some cases it may be desirable to visit a site (access permitting) to further analyze its suitability.

Once a tract has been purchased, it could be managed as potential bald eagle perching, roosting or nesting habitat by measures such as:

- the site could be fenced to exclude livestock, which would aid regeneration of cottonwoods. Once cottonwoods are re-established, livestock could resume grazing the area.

- through consultation with the MBEWG and/or groups such as the Montana Riparian-Wetland Association, more intensive management steps such as prescribed fire or planting cottonwoods could be undertaken if necessary to enhance the site; and

- depending on site conditions, it may be possible to enhance perching or nesting opportunities through the use of artificial structures including posts, poles or nest tripods (Grubb 1980).

Literature Cited

Anderson, S.H. and C.T. Patterson. 1988. Characteristics of bald eagle winter roosts in Wyoming. Prairie Natur. 20(3): 147-152.

Bowerman, W.W. IV, T.G. Grubb, A.J. Bath, J.P. Giesy Jr., G.A. Dawson and R.K. Ennis. 1993. Population composition and perching habitat of wintering bald eagles, *Haliaeetus leucocephalus*, in northcentral Michigan. Canadian Field-Natur. 107(3): 273-278.

Chester, D.N., D.F. Stauffer, T.J. Smith, D.R. Luukkonen and J.D. Fraser. 1990. Habitat use by nonbreeding bald eagles in North Carolina. J. Wildl. Manage. 54: 222-234.

Grubb, T.G. 1980. An artificial bald eagle nest structure. USDA For. Serv. Res. Note RM-383.

Hansen, P.L., R.D. Pfister, K. Boggs, B.J. Cook, J. Joy and D.K. Hinckley. 1995. Classification and management of Montana's riparian and wetland sites. Montana For. and Conserv. Exp. Sta., Univ. Montana School of For., Misc. Publ. No. 54, Missoula.

Harmata, A.R. 1982. Behavior and ecology of wintering and migrant bald eagles in the Rocky Mountains. Job completion report, Montana Dept. Fish, Wildl. and Parks.

Montana Bald Eagle Working Group (MBEWG). 1994. Montana bald eagle management plan. USDI Bur. Recl., Billings, Montana. 104 pp.

Steenhof, K. 1978. Management of wintering bald eagles. U.S. Fish and Wildl. Serv. Off. Biol. Serv. FWS/OBS-78/79.

Steenhof, K., S.S. Berlinger and L.H. Fredrickson. 1980. Habitat use by wintering bald eagles. J. Wildl. Manage. 44(4): 798-805.

U.S. Bureau of Reclamation, Northern Cheyenne Tribe and Montana Department of Natural Resources and Conservation. 1995. Tongue River Basin Project draft environmental impact statement. Montana Dept. Natur. Resour. and Conserv., Helena.

MAINTENANCE SCHEDULING

Assumptions

The following assumptions are made for the purposes of this discussion:

- As discussed in the Biological Assessment for Tongue River Railroad Company's (TRRC) proposed 41-mile rail line between Ashland and Decker, Montana (hereinafter called the TRRC Extension), rail line maintenance activities would fall into two general categories. The first would be comprised of non-emergency or planned activities, such as routine inspections, repair/replacement of rails, ties, ballast, etc., and maintenance of signs, lights, etc. The second category of maintenance activity would be emergency maintenance or repairs. The first category is foreseeable, while the second is not.

- A worst case scenario train derailment rate of 3-4 per 15 years has been projected for the TRRC Extension (ICC 1992). TRRC would reduce the likelihood of derailments by employing certain measures including: equipment maintained to high standards (i.e., first category of maintenance activities); frequent track inspections (again, first category of maintenance activities); high level of employee training and safety awareness; and the installation of guard rails (i.e., additional rails in the center of the track to keep derailed wheels in line) on railroad bridges (ICC 1992).

- Because the TRRC Extension's purpose is to transport coal, the primary hazardous materials carried on the TRRC Extension would be petrochemicals (diesel fuel and lubricants) used by the trains themselves. Transportation of other hazardous materials is not anticipated. However, because TRRC would be a common carrier railroad, it would be possible that materials other than coal (including hazardous materials) could eventually be transported. TRRC would be required to operate in full compliance with the Hazardous Materials Transportation Act (49 U.S.C. 1080 et seq.) and other applicable sate and federal laws governing the safe handling and storage of hazardous materials (ICC 1992).

Objectives

- Schedule planned maintenance activities in such a way as to minimize effects to migrant and breeding bald eagles along the TRRC Extension route, and to reflect the actual chronology of bald eagle use of the Tongue River valley.

- Provide for appropriate responses to train derailments to minimize the potential effect of hazardous material spills on bald eagle habitat, particularly the potential for impact to the aquatic-oriented prey base (fish and waterfowl).

Strategy

- Planned maintenance activities, except regularly scheduled rail inspections, would not take place in Management Zones 1 or 2, or in Management Zone 3 within 1.5 miles of any active bald eagle nest, from February 1 (onset of courtship and nest building) until two weeks after hatching. After May 15 until the first observation of independent flight of the fledglings (usually no later than July 15), these activities could occur in the afternoons, if necessary. By afternoon, adult eagles have usually completed feeding the chicks and there would be minimal disruption of this activity. After fledging occurs, planned maintenance activities could occur anywhere within Management Zones 1, 2 and 3. The actual dates of hatching and fledging would be determined by monitoring each active nest, as discussed in the Biological Assessment.

- Planned maintenance activities would continue anywhere along the TRRC Extension route in the Tongue River valley until late October-early November (arrival of migrant bald eagles). The arrival date would be determined yearly through consultation with MBEWG. Since wintering bald eagles are sensitive to disturbance at roost sites and during foraging (Harmata 1982; McGarigal 1988; MBEWG 1994; Stalmaster and Newman 1978), planned maintenance activities near these sites could be curtailed to minimize disturbance.

- Certain planned maintenance activities, such as routine inspections of the rail line a minimum of two times per week, would necessarily have to occur yearlong, including during the February 1 - May 15 nesting period. Routine inspection trips would also be used to remove carrion from the rail line. These activities would be expected to be of short duration, few in number, usually below the level of nests or roosts, and comparatively quiet. Therefore they would be anticipated to have minimal effects to nesting, nonbreeding or wintering bald eagles (Grubb and King 1991; Steenhof 1978). Moreover, routine activity that occurs twice a week will be predictable to eagles.

- Emergency maintenance or repairs cannot be foreseen and therefore cannot be planned to occur in periods that would minimize the effect to bald eagles. The degree of effect to bald eagles would be influenced by the kind of activity (for example, a train derailment vs. damaged lights or signs at public or private road crossings), magnitude and duration of the activity, the time of the year at which the activity occurs, the location at which it occurs, and the tolerance for disturbance displayed by the affected eagles. As discussed above, TRRC would minimize the occurrence of emergency maintenance activities by implementing sound operational practices; if the TRRC Extension would eventually carry hazardous materials, TRRC would implement additional procedures required by federal and state regulations.

- TRRC would notify USFWS and/or MBEWG immediately of a major emergency maintenance activity that might result in

prolonged disturbance to bald eagles, to determine if additional monitoring of the eagles would be needed.

Literature Cited

Harmata, A.R. 1982. Behavior and ecology of wintering and migrant bald eagles in the Rocky Mountains. Job completion report, Montana Dept. Fish, Wildl. and Parks.

Interstate Commerce Commission. 1992. Draft environmental impact statement, Finance Docket No. 30186 (Sub-No.2), Tongue River Railroad Company - construction and operation of an additional rail line from Ashland to Decker, Montana. Interst. Commerce Comm., Section of Energy and Environ., Washington, D.C.

McGarigal, K. 1988. Human-eagle interactions on the lower Columbian River. M.S. thesis, Oregon St. Univ.

Montana Bald Eagle Working Group (MBEWG). 1994. Montana bald eagle management plan. USDI Bur. Recl., Billings, Montana. 104 pp.

Stalmaster, M.V. and J.R. Newman. 1978. Behavioral responses of wintering bald eagles to human activity. J. Wildl. Manage. 42: 506-513.

Steenhof, K. 1978. Management of wintering bald eagles. U.S. Fish and Wildl. Serv. Off. Biol. Serv. FWS/OBS-78/79.

ADDITIONAL MONITORING

As discussed in the Biological Assessment for Tongue River Railroad Company's (TRRC) proposed 41-mile rail line between Ashland and Decker, Montana (hereinafter called the TRRC Extension), TRRC will employ a monitoring program to locate active bald eagle nests prior to construction of the TRRC Extension, and monitor these sites during construction of the railroad. After subsequent discussions with the Montana Bald Eagle Working Group (MBEWG), TRRC will expand the monitoring program in an effort to obtain more information about foraging patterns of breeding, nonbreeding and migrant bald eagles along the Tongue River valley in the vicinity of the TRRC Extension. This effort will include:

- Aerial surveys of the Tongue River from its confluence with the Yellowstone River to the upper end of the Tongue River Reservoir (approximately Decker, Montana) will be flown in December, January and February. Even though the TRRC Extension will run only from Decker to Ashland, the rest of the river will be flown to document any differences in prey availability and/or wintering eagle distribution in comparison to the TRRC Extension route. A fixed-wing aircraft will be used for the surveys. Information to be recorded will include: 1) locations of individual bald eagles (these sightings will also be used to help select cottonwood stands for habitat enhancement); 2) age structure of wintering eagles (i.e., adult vs. immature); 3) locations of nests; 4) locations of great blue heron and/or double-crested cormorant rookeries (potential eagle nest sites); 4) locations of prey (waterfowl) concentrations; 5) approximate

numbers of prey at each site; 6) approximate species group composition of prey (e.g., geese, ducks (if possible, ducks will be differentiated into "puddle" ducks, diving ducks, mergansers, etc. This may not be possible from an aircraft), gulls, herons, etc.; 7) relative percent of open water; 8) physical features (dams, riffles, etc.) that may concentrate prey; 9) other potential prey species such as concentrations of turkeys or pheasants, prairie dog colonies, etc.; and 10) any concentrations of carrion (such as around feedlots).

- An aerial survey will be flown in April, prior to "leaf-out," to determine nesting activity and the approximate locations of non-nesting pairs (this latter information would also be usable in the selection of habitat enhancement sites).

- It may be possible to survey portions of the Tongue River along the TRRC Extension route in late June/early July to monitor waterfowl species composition and productivity (i.e., summer prey base). This survey would be done by canoe and would likely be defined by stream flows and access/egress points. Information to be collected would include: 1) waterfowl species composition; 2) brood size per observation; 3) numbers of apparently nonbreeding waterfowl present; and 4) numbers and composition of other potential species (herons, cormorants, etc.).

- If access to active bald eagle nests on private lands can be obtained, nest sites will be visited post-fledging to search for prey remains. This information, although qualitative, would provide some indication of food habitats at individual nest sites.

MAINTAIN/ENHANCE PREY BASE

Assumptions

The following assumptions are made for the purposes of this discussion:

- "Prey base" refers to both the diversity and total biomass of forage items consumed by bald eagles in the Tongue River valley along the Tongue River Railroad Company's (TRRC) proposed 41-mile rail line between Ashland and Decker, Montana (hereinafter called the TRRC Extension).

- The prey base for bald eagles in the Tongue River valley is primarily comprised of fish, waterfowl and carrion. The availabilities (numbers, location and ease of capture) of these three prey items are largely unknown but probably differ seasonally and yearly, as well as by location along the route. It is recognized that other prey items (e.g., ground squirrels, prairie dogs, rabbits, etc.) may also be taken (MBEWG 1994).

- The upland prey base away from the Tongue River valley (e.g., carrion, rabbits, etc.) may be seasonally important for bald eagles nesting in the valley but will not be

addressed in this discussion because this prey base should be unaffected by construction and operation of the TRRC Extension.

- The nesting waterfowl prey base along the Tongue River valley appears to be habitat limited. For example, a review of USGS 7.5-minute topographic maps of the TRRC Extension route suggests that there are only 15-20 islands in the river, and 3-4 oxbows adjacent to the river, which might create backwaters suitable for nesting waterfowl.

- The nesting waterfowl prey base away from the Tongue River in the vicinity of the TRRC Extension is probably also limited by lack of habitat, since the only perennial tributary to the Tongue River along the TRRC Extension route is Hanging Woman Creek (ICC 1992). Small dams on ephemeral tributaries are probably too small to contribute significant numbers of nesting waterfowl. In addition, since most of these sites were constructed to livestock water supply, upland nesting habitat in the vicinity is usually limited.

- The migratory/wintering waterfowl prey base is probably a function of stream flows and weather. Flows in the Tongue River will be regulated by the Tongue River Basin Project to maintain certain minimums; additional instream flows may be purchased as a mitigation measure to this project (USBR 1995). Winter severity (particularly freezing water and snow depth in fields) may also affect the numbers of waterfowl using the river, and the duration of their use.

- Mitigation of waterfowl habitat (wetlands) immediately below the Tongue River Dam, as well as along the Tongue River Reservoir shoreline, has been proposed by the Tongue River Basin Project DEIS (USBR 1995). Therefore this discussion does not address these sites further.

- The primary source of carrion during operation of the TRRC Extension will be deer killed by trains. Carrion on lands not associated with the railroad, such as livestock on private lands, will remain an unpredictable source. While train/deer accidents are also unpredictable, it is assumed that they will occur, particularly during winter.

- Although the TRRC Extension will cross the Tongue River five times on bridges, the effects of bridge construction on the fisheries prey base are expected to be short-term, primarily as a result of displacement from the construction sites and sedimentation caused by instream activities.

- Maintaining and/or enhancing the fisheries prey base in the Tongue River has been addressed in the Tongue River Basin Project draft environmental impact statement (DEIS) (USBR 1995). The Montana Department of Fish, Wildlife and Parks (MDFWP) will be monitoring the effects of the Tongue River Basin Project on downstream fisheries. While this monitoring effort appears to be primarily oriented towards game fish species (USBR 1995), it seems reasonable to assume that nongame fish could be included in this monitoring

effort through coordination between the Montana Bald Eagle Working Group (MBEWG) and MDFWP.

Objectives

- Maintain or enhance waterfowl habitat along the TRRC Extension route south of the Tongue River Dam, and/or in upland areas away from the rail line.
- Remove carrion from the rail line in such a manner as to eliminate or minimize the potential for mortalities of bald eagle from train strikes, while retaining this carrion as a potential food source.

Problems

- Foraging patterns of breeding, nonbreeding and migrant bald eagles along the Tongue River valley in the vicinity of the TRRC Extension route are essentially unknown.
- Opportunities to enhance waterfowl habitat in the vicinity of the route are physically limited. To support sufficient numbers of nesting or migratory waterfowl to attract foraging bald eagles, such sites should probably several acres in individual or combined size.

Strategy

TRRC (in consultation with the Montana Bald Eagle Working Group (MBEWG)) could identify tracts of land along the TRRC Extension route and in neighboring tributaries for purchase for management as nesting waterfowl habitat. Criteria that could be used to select such tracts in the river valley could include:

- location of existing oxbows or other wetlands near the rail line that have limited agricultural productivity (grazing or hay/crop production). Landowners may be receptive to selling such areas for use as waterfowl management sites.
- location of areas that would be "severed" by construction of the railroad. Landowners who would otherwise have difficulty accessing these sites for agricultural management due to the railroad, might be receptive to selling such sites for wildlife management purposes. If such sites appear to have a comparatively high water table due to their location near the river, it may be possible to develop wetlands by dredging or blasting.
- ephemeral drainages crossed by the rail line where the placement of culverts through the railroad grade could be adjusted to create wetlands.

Criteria that could be used to select such tracts away from the river valley could include:

- size of the ephemeral drainage, as determined from topographic maps. It would be desirable to have a large enough drainage to provide sufficient runoff to fill a sizeable wetland.

X

- availability of water rights on drainages that might be selected for wetland creation or enhancement.

Tracts would be selected by reviewing aerial photos of the TRRC Extension route along the Tongue River valley, and topographic maps of the tributary drainages. Engineers involved in the design of the railroad grade would be consulted during the examination of potential wetlands created along the railroad grade. Potential sites would be identified and prioritized based on the above criteria. In many cases it would be necessary to visit a site (access permitting) to further analyze its suitability.

Once a tract has been purchased, it could be managed as potential bald eagle perching, roosting or nesting habitat by measures such as:

- the site could be fenced to exclude livestock, which would aid regeneration of cottonwoods and understory species;
- it is assumed that natural revegetation of a created or enhanced wetland would occur quickly. In some cases it could be beneficial to plant appropriate wetland vegetation;
- small islands or other structures could be placed in certain wetlands to enhance waterfowl nesting; and
- depending on the site and neighboring habitat, it may be desirable to erect artificial perches for bald eagles at appropriate distances from the wetland.

As discussed in the Biological Assessment (BA) for the TRRC Extension, TRRC employees engaged in routine inspection of the rail line (a minimum of two times per week) would remove train-killed deer or other large animals from the rail line. These employees will have to use discretion in disposal of carrion. Depending on the location of the dead animal, size of remains, etc., it may be appropriate to move the carrion off the tracks but retain it within the railroad right of way. In other cases it may be appropriate to move the carrion to a selected site further from the right-of-way where the potential for bald eagle mortalities will be lessened.

Literature Cited

Interstate Commerce Commission. 1992. Draft environmental impact statement, Finance Docket No. 30186 (Sub-No.2), Tongue River Railroad Company - construction and operation of an additional rail line from Ashland to Decker, Montana. Interst. Commerce Comm., Section of Energy and Environ., Washington, D.C.

Montana Bald Eagle Working Group (MBEWG). 1994. Montana bald eagle management plan. USDI Bur. Recl., Billings, Montana. 104 pp.

U.S. Bureau of Reclamation, Northern Cheyenne Tribe and Montana Department of Natural Resources and Conservation. 1995. Tongue River Basin Project draft environmental impact statement. Montana Dept. Natur. Resour. and Conserv., Helena.

CONSTRUCTION TIMING CONSTRAINTS

Assumptions

As discussed in the Biological Assessment (BA) for the TRRC Extension, TRRC would restrict construction activities within Management Zones 1, 2 and 3 (MBEWG 1994) around active bald eagle nests. After further consultation with members of the Montana Bald Eagle Working Group (MBEWG), the following assumptions are made for the purposes of this discussion:

- Although based on a small sample size (n = two nests), bald eagle nesting chronology along the Tongue River appears to be: 1) courtship and nest building probably begin in early February; 2) egg laying probably begins in the second week of March; 3) a complete clutch has been laid by March 25; 4) the most sensitive period to disturbance (nest building, egg laying and incubation) therefore extends from February 1 to May 10-15; and 5) fledging occurs by July 15.

- Other bald eagle nests in Recovery Zone 41 (lands drained by the Yellowstone River and its tributaries from the Bighorn River to the North Dakota border) follow this same general chronology.

- In any given year, or at any given active bald eagle nest, nesting chronology may differ from the above time frame.

- TRRC would institute a monitoring program at each active bald eagle nest along the TRRC Extension route, as discussed in the Biological Assessment.

- Distance is the most important aspect of human disturbance to bald eagles; in descending order, the most disturbing human activities are pedestrian (people walking), aquatic (people in canoes or boats, particularly in bald eagle foraging areas), vehicle, noise and aircraft (Grubb and King 1991).

- Foraging bald eagles are more sensitive to disturbance than non-feeding eagles (Harmata 1982; Knight and Knight 1984; McGarigal 1988).

- Low intensity activities associated with construction of the TRRC Extension include field inspections, surveying the route, environmental monitoring, etc. Low intensity activities will involve pedestrian and vehicle disturbances, but will have little noise. High intensity construction activities include heavy construction vehicles (e.g., bulldozers, scrapers, trucks hauling ballast and other materials, etc.), pile driving for bridges (e.g., cranes), etc. However, blasting is not foreseen at any location along the route.

Objective

- Adjust the TRRC Extension construction schedule to reflect the actual bald eagle nesting season on the Tongue River.

Strategy

- There would be no construction activities (low or high intensity) within Management Zones 1 and 2 at any active bald eagle nest during the February 1 - July 15 period, or until five days after the first observation of independent flight, as recorded by the nest monitoring effort described in the Biological Assessment.

- Low intensity activities could occur in Management Zone 3 beyond 1.5 miles of any active nest from February 1 until initiation of hatching (two weeks after hatching). High intensity activities would not occur in Management Zone 3 around any active nest during this period.

- Once monitoring confirms that fledging has occurred (i.e., five days following the first observation of independent flight, or approximately July 15), high intensity activities could occur anywhere within Management Zones 1, 2 and 3.

- Since nesting chronology may vary from nest to nest and year to year, the final determinant of construction activities in the vicinity of any active nest will be the nest monitoring program discussed in the Biological Assessment.

Literature Cited

Grubb, T.G. and R.M. King. 1991. Assessing human disturbance of breeding bald eagles with classification tree models. J. Wildl. Manage. 55(3): 500-511.

Harmata, A.R. 1982. Behavior and ecology of wintering and migrant bald eagles in the Rocky Mountains. Job completion report, Montana Dept. Fish, Wildl. and Parks.

Knight, R.L. and S.K. Knight. 1984. Responses of wintering bald eagles to boating activity. J. Wildl. Manage. 48(3): 999-1004.

McGarigal, K. 1988. Human-eagle interactions on the lower Columbian River. M.S. thesis, Oregon St. Univ.

Montana Bald Eagle Working Group (MBEWG). 1994. Montana bald eagle management plan. USDI Bur. Recl., Billings, Montana. 104 pp.

United States Department of the Interior

FISH AND WILDLIFE SERVICE

IN REPLY REFER TO

Fish and Wildlife Enhancement
301 South Park
P.O. Drawer 10023
Helena, Montana 59626
Federal Building, U.S. Courthouse

M.24 ICC Tongue River RR

August 29, 1991

Ms. Elaine K. Kaiser, Chief
Section of Energy and Environment
Interstate Commerce Commission
Washington, DC 20423

Dear Ms. Kaiser:

This responds to your July 29, 1991 letter concerning the environmental impact statement (EIS) to be prepared regarding the proposed Tongue River Railroad "Extension" (i.e., from near Ashland to near Decker, Montana). Your letter requested our comments on several aspects of the proposal. For convenience, we have attempted to organize our response into categories, as follows:

Threatened and Endangered Species - You requested our comments on the status of Historical Research Associates' (HRA) Section 7 compliance thus far.

In this regard, personnel from the Billings Suboffice of the U.S. Fish and Wildlife Service (Service) met with HRA representatives on January 18, 1990 to informally discuss the proposed rail extension. Threatened and endangered species and other topics were discussed, including Section 7 compliance procedures. Previously, in response to a Federal Register Notice of Intent by the Interstate Commerce Commission (ICC) to prepare an EIS, dated November 17, 1989, we provided a list of species that should be considered in connection with the proposal (our letter dated December 28, 1989, and addressed to Ms. Dana White).

As far as our records indicate (and memory serves), there has been no further communication between this office and HRA, except we believe for a couple of informal telephone conversations between the various parties present at the January 18, 1990 meeting in Billings. These occurred shortly after the meeting itself.

Because more than 180 days has elapsed since our December 1989 list of species was provided to you and we have not reviewed biological assessments prepared by ICC or your designated agents, we are hereby reconfirming the list provided to you at that time (i.e., bald eagle (Haliaeetus leucocephalus), peregrine falcon (Falco peregrinus), and black-footed ferret (Mustela nigripes)). Our assumption in this regard is that your July 29, 1991 letter constitutes a request for an updated list of the relevant species. Please see our original letter (December 28, 1989) for further procedural guidance. In this regard, please note that the Service is required to review and concur in the eventual findings of your biological assessments.

The Exhibit H to the Environmental Report prepared by HRA, and which accompanied your July 29, 1991 letter, indicates that some impacts will occur to one or more prairie dog towns that exist in the project right-of-way north of Birney. It is further stated that pre-construction surveys will be conducted according to U.S. Fish and Wildlife Service (Service) guidelines, "to assure that construction does not impact prairie dog complexes greater than 80 acres".

In this regard, it is noted that, recently, a prairie dog inventory was conducted by the Bureau of Indian Affairs (BIA) and Northern Cheyenne Tribe (NCT), primarily on the Northern Cheyenne Indian Reservation. A very large (approximately 10,000-acre) complex was identified and mapped. This complex is located primarily along the eastern boundary of the reservation. Although the river intervenes, it is quite possible that any prairie dog towns lying "north of Birney" that would be impacted by the railroad may be part of this large complex. Please see the U.S. Fish and Wildlife Service's survey guidelines for the black-footed ferret, dated April 1989, especially Appendix II (copy enclosed). If any prairie dog towns impacted by the railroad are, indeed, within the boundary of the large complex identified by the BIA/NCT inventory, your biological assessment for the black-footed ferret would need to address not only the potential for direct impacts to ferrets, but whether or not the potential of the complex to support black-footed ferret recovery may be affected. In that connection, we note the following:

(1) The Service believes that 175,000 to 200,000 acres of prairie dog habitat at ten or more sites (1,000 acres or greater) in the west should be managed for black-footed ferret recovery.

(2) The Service wants to evaluate black-footed ferret recovery potential of all prairie dog complexes of over 1,000 acres.

(3) Prairie dog complexes greater than or equal to 1,000 acres that will be affected by federally proposed actions or funded programs must be considered by the Service as "essential" to the recovery and survival of the black-footed ferret until these areas have been specifically evaluated and determined not to be essential.

(4) Federal "actions" which reduce the integrity of potential black-footed ferret recovery sites or recovery options are considered as "adverse affects" requiring formal consultation.

(5) The jeopardy standard for the ferret in these cases depends on the presence of the species in the area (if found during surveys) and/or the magnitude of the effect of the actions on prairie dog density and distribution in the affected prairie dog complex. Significant changes in this habitat may be considered as jeopardy because loss of habitat needed for recovery also jeopardizes the survival of this species in the wild.

Concerning the bald eagle, please see our comments regarding the "Four Mile Creek Alternative", later herein.

Fish and Wildlife Impacts (General) - Your July 29 letter requested our comments on an array of (non-threatened/endangered) fish and wildlife resources. We have not been actively involved in assessing the potential impacts of the railroad on such resources, and as a consequence, we are in a position to comment only very generally.

In general, the information on fish and wildlife contained in HRA's Exhibit H appears accurate and reliable. Much of it is descriptive in nature, however. Information on impacts, and on mitigation planning and commitments, are rather general for the most part. This may only reflect the stage of planning, but it is hoped that the EIS will reveal both impacts and mitigation measures in more detail. For example, Table 4-30, which shows the location of proposed wetland impacts, is very useful. However, a reasonable estimate of the acreages of wetland to be impacted would add much to the perspective, some discussion of how the impacts will be minimized appears warranted, and a more specific commitment to effective mitigation of unavoidable impacts appears appropriate (we note that the general nature of mitigation opportunities for wetland impacts are well presented; however, will these be accomplished exclusively through the Section 404 process?). Further attention to other fish and wildlife mitigation needs appears desirable in the EIS as well, such as the specific protective measures to be taken in the confined canyon area where several river crossings may create potentially significant sedimentation of a reach of the Tongue River. A discussion of how these measures will be effectively implemented (assured) would be useful.

Concerning the necessity for fencing the railroad, which fairly closely parallels the Tongue River for much of its route, we suggest it may be appropriate to design the fencing so it will not constitute a hazard or block to deer migrating between the Tongue River riparian zone and adjacent uplands; however, we suggest that you consult with appropriate representatives of the Montana Department of Fish, Wildlife and Parks (MDFWP) on this matter.

Four Mile Creek Alternative - You asked our opinion regarding this route (i.e., as an alternative to the part of the railroad "Extension" project planned for the Tongue River Canyon).

We have not, of course, had a chance to examine this alternative in detail. From what is known, however, it appears clear that impacts to fish and wildlife resources, and to Tongue River based recreation, would be considerably lessened.

As you know, much of river based recreation (not the reservoir portion) in the area occurs in the canyon where the MDFWP operates the Tongue River State Recreation Area, which would apparently be rather dramatically impacted if the canyon route is used. Adverse impacts on the most scenic portion of the river would also be avoided by the Four Mile Creek alternative.

The Four Mile Creek route would also avoid most (all but one?) of the projected crossings of Tongue River, thus almost eliminating the expected stream channel disturbances and riparian zone impacts of the project. Threats of pollution (sedimentation during and after construction, the use of herbicides along the right-of-way during long-term maintenance activities, and the potential for hazardous or toxic spills during construction or train derailing in the future)

would be eliminated. We also note that a number of bald eagles are known to winter in the canyon area; these would be susceptible to disturbance during and after project construction, a matter that should be addressed in your biological assessment for this species. Obviously, this element of disturbance would be eliminated, along with the possibility of a toxic spill that might impact wintering eagle's food base (largely fish and waterfowl) in the fairly open water in the river canyon.

Fairly large numbers of waterfowl are known to use the Tongue River canyon area (noted in Exhibit H), including during the winter. These birds would be vulnerable to any toxic spills occurring as a consequence of the railroad being sited in the canyon.

We know of no potential impacts to fish and wildlife that are anything close to being of comparable extent in connection with the Four Mile Creek route. From a fish and wildlife perspective, the Four Mile Creek route appears clearly preferable.

We appreciate the opportunity to comment at this point in project planning. Informal questions regarding this letter may be directed by Mr. Gary Wood of our Billings Suboffice 406-657-6750 (FTS: 585-6750).

Sincerely,

Dale Harms
State Supervisor
Montana State Office
(406)449-5225

JGW/dc

Attachment (1)

cc: Suboffice Coordinator, USFWS, Fish & Wildlife Enhancement (Billings, MT)
Montana Dept. of Fish, Wildlife & Parks (Miles City, MT)

United States Department of the Interior

FISH AND WILDLIFE SERVICE

IN REPLY REFER TO

Ecological Services
100 North Park, Suite 320
Helena Montana 59601

ES-61130-Billings
M.24-ICC Tongue River RR

May 4, 1994

Ms. Elaine K. Kaiser, Chief
Section of Energy and Environment
Interstate Commerce Commission
Washington, DC 20423

Dear Ms. Kaiser:

30186

We have reviewed the Supplement to the Draft Environmental Impact Statement for the Tongue River Railroad Company Finance Docket No. ~~291~~ (Sub. no. 2) dated March 17, 1994. The purpose of the Supplement is to change the identified environmentally preferred alternative from the Four Mile Creek Alternative listed in the DEIS to the route proposed by the Tongue River Railroad Company (TRRC).

This change is being proposed because the Interstate Commerce Commission's Section of Environmental Analysis has now determined that the Four Mile Creek Alternative would have more unmitigable adverse consequences on the environment than the Tongue River Railroad Company proposed route through the Tongue River Canyon.

The Fish and Wildlife Service (Service) provided comments to the Interstate Commerce Commission (ICC) in a letter dated August 29, 1991. A summary of the Service's comments on the Four Mile Creek Alternative follows:

- Impacts to fish and wildlife resources and to Tongue River recreation would be less;
- Adverse impacts to Tongue River State Recreation Area would be avoided;
- Adverse impacts to the scenic canyon would be avoided;
- Tongue River crossings would be reduced to one;
- Less channel disturbance and riparian habitat impacts;
- Reduced pollution threats; re: sedimentation, toxic spills, herbicide use;
- Reduced impacts to wintering bald eagles;
- Four Mile Creek Alternative preferable from fish and wildlife. perspective.

These comments still reflect the Service's position on the Four Mile Creek Alternative. We do not agree that the potentially significant environmental impacts addressed on pages 10 and 11 of the Supplement justify changing the environmentally preferred alternative. It is the Service's position that construction impacts associated with building the railroad through up the canyon will be far more difficult to mitigate than adverse impacts associated

with the Four Mile Creek Alternative. Obviously, none of the adverse environmental impacts would occur if a "No Build" alternative was selected. In addition, two bald eagle nests, No. 41005-01 and No. 41005-02, that could be impacted by the proposed project have been established since 1991. Nest 41005-01 is about two miles downstream of the confluence of the Four Mile Creek and nest 41005-02 is about 3.5 miles upstream of the confluence. Nest 41005-02 was active last year and nest 41005-01 was active the year before. Nest 41005-02 is active again this year. It appears that construction of the Four Mile Creek alternative would cause less impacts to wintering and nesting bald eagles than the proposed route.

Regarding compliance with the Endangered Species Act (ESA) and the preparation of the biological assessment concerning threatened and endangered species, it is our understanding that Historical Research Associates (HRA) has been designated the "non-federal representative" for the ICC. The rules and regulations (50 CFR Part 402) which guide interagency cooperation in application of the ESA define "designated non-Federal representative" as a person designated by the Federal agency as a representative to conduct informal consultation and/or to prepare any biological assessment.

Biological assessments are required for "major construction activities" and are designed to assist Federal agencies in determining whether section 7(a)(2) consultation should be initiated by identifying endangered or threatened species that may be present in the area affected by proposed Federal actions and by identifying impacts of those projects on such species. Biological assessments should be viewed as a tool used to identify impacts to species or habitat so that a decision can be made as to whether a proposed action is likely to adversely affect listed species or critical habitat. Further, biological assessments can be used to determine whether a conference or formal consultation is required.

Procedures require HRA, as ICC's designated non-Federal representative, to submit to the Service a written request for a list of any listed/proposed species or designated/proposed critical habitat that may be present in the action area or HRA may submit to the Service a written notification of the species and critical habitat that are being included in the biological assessment.

The Service provided the ICC with a list of threatened and endangered species in correspondence dated December 28, 1989. This list was reconfirmed on August 29, 1991. Because more than 180 days has elapsed since our August 1991 list of species was provided to you and we have not reviewed biological assessments prepared by ICC or your designated agent, we are hereby reconfirming the list provided (i.e. bald eagle (Haliaeetus leucocephalus), peregrine falcon (Falco peregrinus), and black-footed ferret (Mustela nigripes).

The Service further clarifies that ICC must retain the responsibility to initiate formal consultation along with its ultimate responsibility to ensure that its actions are not likely to jeopardize the continued existence of listed species. ICC's designation of HRA as their non-Federal representative to conduct informal consultation does not lessen these responsibilities or

eliminate ICC's duty to review its actions. ICC must still review the work products (informal consultation records and evaluate the scope and contents of biological assessments) and independently reach its own conclusions and decisions. HRA as the non-Federal representative may be responsible (at ICC's discretion) for the ground work (data compilation, synthesis, developing conservation measures, recommendations, and producing draft biological assessments for ICC). HRA must then submit draft biological assessments to ICC for their review and ICC must determine, based upon its review and analysis of the project biological assessment, if formal consultation is required because the ultimate responsibility for compliance with section 7 of the ESA remains with ICC.

During the last few days we have had two phone conversations with Mr. Alan Newell of HRA. Mr. Newell stated that it was his impression that the agencies had agreed that the biological assessment need not be done until they had completed the third phase of engineering and had obtained right-of-way. Please note that the Service in our December 24, 1991 letter regarding section 7 compliance stated our preference that section 7 compliance be completed and included in National Environmental Compliance Act documents. Since we now know that bald eagle nests have been established in close proximity to the preferred alternative identified in the Supplemental EIS and have additional data regarding black-footed ferrets we recommend that a biological assessment be prepared and section 7 compliance be completed and included in final NEPA documents. The Service is available to assist ICC in assembling existing data regarding threatened and endangered species occurrence in the proposed project area.

We would also like to mention that our office is an active member on the mitigation/enhancement team for the Northern Cheyenne Indian Water Rights Settlement Act(Act) of 1992. The goal of the team is to develop and implement the enhancement/mitigation aspects of the (Act) of 1992 with emphasis on maximizing fish and wildlife values while restoring, creating, and improving wetland/riparian habitat along the Tongue River in Montana. Congress has authorized the expenditure of $3.5 million with the proposed $1.1 million non-federal match for a total of $4.6 million to enhance fish and wildlife values along the Tongue River. These projects will need to be coordinated carefully to assure there are no unnecessary conflicts.

We appreciate the opportunity to comment at this point in project planning. Informal questions regarding this letter may be directed by Mr. Steve Oddan of our Billings Suboffice 406-657-6750.

Sincerely,

Kemper M. McMaster
Field Supervisor
Montana Field Office

cc: Suboffice Coordinator, USFWS, Fish & Wildlife Enhancement (Billings, MT)
Montana Dept. of Fish, Wildlife & Parks (Miles City, MT)
Steve Potts, EPA, (Helena, MT)

INTERSTATE COMMERCE COMMISSION
Washington, DC 20423

OFFICE OF ECONOMIC AND ENVIRONMENTAL ANALYSIS

June 29, 1995

Mr. Kemper M. McMaster
Field Supervisor
Montana Field Office, Ecological Services
U.S. Fish and Wildlife Service
100 North Park, Suite 320
Helena, MT 59601

Re: ICC Finance Docket 30186 (Sub No. 2) Tongue River Railroad Company - Construction and Operation of Additional Rail Line Ashland to Decker, MT

Dear Mr. McMaster:

Enclosed is the Biological Assessment (BA) for the Tongue River Railroad Company's (TRRC) proposed construction and operation between Ashland and Decker, Montana. Pursuant to the regulations implementing the Endangered Species Act (ESA) at 50 CFR 402.08, the BA has been prepared by Historical Research Associates, Inc. (HRA), the non-Federal representative, and Western Technology and Engineering, Inc., HRA's sub-contractor. The BA addresses the potential effects from the construction and operation of TRRC's preferred railroad alignment on the four endangered species which could occur in the project area. The four endangered species are bald eagle, peregrine falcon, black-footed ferret, and pallid sturgeon.

The BA develops mitigation and concludes that the proposed construction and operation is not likely to adversely affect any of the four endangered species. As the Federal resource agency with expertise on threatened and endangered species, we rely on your office for further evaluation.

We formally seek your opinion regarding the accuracy of the BA's analysis, the scope of the mitigation, and whether you concur with the determination that the construction and operation of TRRC's preferred railroad alignment is not likely to adversely affect any of the species.

Your comments will assist us in complying with the mandates of ESA and offer guidance for the completion of the environmental review process in this proceeding. We request that you provide us with your comments within 30 days of receipt of the BA. If you have any questions, please contact Ms. Dana White at (202) 927-6214. Thank you for your continuing cooperation.

Sincerely yours,

Milan P. Yager

Milan P. Yager
Director

Enclosure

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
100 North Park, Suite 320
Helena Montana 59601

IN REPLY REFER TO:
ES-61130-Billings
M.24-ICC Tongue River RR

July 12, 1995

Mr. Milan P. Yager Director
Office of Economic and Environmental Analysis
Interstate Commerce Commission
Washington, DC 20423

Dear Mr. Yager:

We have reviewed the Biological Assessment (BA) for the Tongue River Railroad Company ICC Finance Docket No. 30186 (Sub. no. 2) - Construction and Operation of Additional Rail Line Ashland to Decker, MT dated June 1995 and your cover letter dated June 29, 1995.

As stated in your cover letter the BA was prepared by Historical Research Associates, Inc. (HRA), the non-Federal representative, and Western Technology and Engineering, Inc., HRA's sub-contractor. The BA addresses the potential effects of construction and operation of the railroad on the four endangered species in the project area (bald eagle, peregrine falcon, black-footed ferret, and pallid sturgeon). The BA concludes that the proposed construction and operation of the railroad is not likely to adversely affect any of the four endangered species. Your June 29 letter asks for Fish and Wildlife Service (Service) concurrence in these determinations.

We believe the document accurately addresses potential impacts to the listed species. We also concur with Historical Research Associates, Inc's determination that the proposed project is not likely to adversely affect peregrine falcon, black-footed ferret or pallid sturgeon. The Service however, does not concur with HRA's is not likely to adversely affect determination for the bald eagle. Although management measures proposed by Tongue River Railroad (i.e. construction timing, monitoring, purchasing tracts of land for management of potential bald eagle nesting habitat) are positive and should help reduce potential impacts to bald eagles, the close proximity of the proposed railroad to bald eagle Nest 03 may cause abandonment of the nest or premature fledging of chicks. We therefore request that the Interstate Commerce Commission initiate formal consultation with this office under section 7 of the Endangered Species Act of 1973 (.PL. 93-205), as amended.

Questions regarding this letter may be directed to Mr. Steve Oddan of our Billings Suboffice 406-247-7366.

Sincerely,

Kemper M. McMaster
Field Supervisor
Montana Field Office

cc: Suboffice Coordinator, Ecological Services (Billings, MT)

C-94

INTERSTATE COMMERCE COMMISSION
Washington, DC 20423

OFFICE OF ECONOMIC AND ENVIRONMENTAL ANALYSIS

August 18, 1995

Mr. Kemper M. McMaster
Field Supervisor
Montana Field Office
U.S. Fish and Wildlife Service
100 North Park, Suite 320
Helena, MT 59601

Re: ICC Finance Docket 30186 (Sub No. 2) - Tongue River Railroad Company - Construction and Operation of an Additional Rail Line Ashland to Decker, MT

Dear Mr. McMaster:

In response to your letter to Milan Yager, dated July 12, 1995, and on behalf of the Interstate Commerce Commission, I am initiating formal consultation with the U.S. Fish and Wildlife Service pursuant to the requirements of Section 7 of the Endangered Species Act, PL 93-205, as amended.

Formal consultation involves the Tongue River Railroad Company's (TRRC's) proposed action before the Interstate Commerce Commission (Commission) to construct and operate an additional rail line from Ashland to Decker, Montana. There are four endangered species in the project area: bald eagle, peregrine falcon, black-footed ferret, and pallid sturgeon.

Your letter responded to our request for your opinion regarding the Biological Assessment (BA) prepared for this proposal. You stated that you agree that the BA accurately addresses potential impacts to the listed species and you concurred with the determination that the proposed project is not likely to adversely affect peregrine falcon, black-footed ferret or pallid sturgeon. However, you did not concur with the BA's determination that the project is not likely to adversely affect the bald eagle. As you stated, although proposed management measures in the BA are positive and should help reduce potential impacts to bald eagles, the close proximity of the railroad's preferred alignment to bald eagle Nest 03 may cause abandonment of the nest or premature fledging of chicks.

To comply with the requirements to initiate formal consultation, we have responded to the following:

1. Description of the Proposed Action and the Affected Area.

The proposed action involves TRRC's application before the Commission in Finance Docket 30186 (Sub No. 2) to construct and operate an approximately 41-mile rail line from Ashland to Decker, Montana. The proposed rail line would serve as an extension to TRRC's already-approved but not yet built 89-mile rail line from Miles City to Ashland, Montana.

There are two possible alignments and a "no build" alternative. The two alignments are TRRC's preferred alignment and the Four Mile Creek Alternative. Please see the attached map. TRRC's preferred alignment generally follows the Tongue River and passes around the Tongue River Reservoir to the west to connect with an existing rail line in the Decker area. TRRC's preferred route involves the construction of five bridges and a tunnel.

The Four Mile Creek Alternative is the only alternative TRRC considers feasible because of the surrounding terrain. The Four Mile Creek Alternative diverges from TRRC's preferred alignment at the confluence of the Tongue River and Four Mile Creek. The Four Mile Creek Alternative would avoid the Tongue River Dam and the approximate 10-mile segment of the Tongue River that includes the Tongue River canyon, removing the need to construct the five bridges and the tunnel.

The "no build" or no action alternative would deny TRRC's application.[1]

Detailed descriptions of the two construction/operation alignments, as well as the "no build" alternative, are included in the two environmental documents which have been prepared for this proceeding: the Draft Environmental Impact Statement, served July 17, 1992, and the Supplement to the Draft Environmental Impact Statement, served March 17, 1994. These documents were prepared by the Commission's Section of Environmental Analysis (SEA), the office responsible for completing the environmental review process. Copies of both documents are attached.

---

[1] The "no build" alternative would be environmentally neutral since none of the potential environmental impacts associated with the proposed extension would occur. However, the previously authorized 89-mile line from Miles City to Ashland, designed to serve new mines in Montana, could still be constructed and operated. Moreover, the present movement of coal from the Decker area would be unaffected and would continue to be transported along the existing Burlington Northern line which now serves the Powder River Basin.

2. Description of Listed Species or Habitat That May Be Affected.

There are four endangered species in the project area: bald eagle, peregrine falcon, black-footed ferret, and pallid sturgeon.

TRRC's preferred alignment and the Four Mile Creek Alternative are located in the Tongue River Basin, a sub-drainage of the Yellowstone River Basin. Originating in the Big Horn Mountains in Wyoming, the Tongue River flows northward into Montana to its confluence with the Yellowstone River near Miles City.

The Tongue River valley is bordered by hills and procellanite-capped buttes that rise 200 to 500 feet above the valley bottom. Precipitation is very light. In addition to the Tongue River, the Tongue River Reservoir and Dam near the Montana-Wyoming border is a major water feature of the basin. Downstream from the reservoir are numerous drainages that are generally intermittent. In Montana, the flow of the Tongue River is controlled by the Tongue River Reservoir and Dam.

The Tongue River cuts through a narrow, twisting valley and canyon from the Tongue River Reservoir and Dam north to its confluence with Four Mile Creek, a distance of about 10 miles. Because the river channel is narrow and fairly deep along this section, portions of the river do not freeze, providing important winter habitat for waterfowl and other wildlife.

Over 90 percent of the land in the Tongue River valley is used for agriculture, principally family-owned cattle ranching. The four principal counties affected by the proposed extension are Big Horn, Custer, Powder River and Rosebud counties, with overall sparse population.

The Northern Cheyenne Indian Reservation is located in Rosebud and Bighorn counties, with the Tongue River forming the Reservation's eastern boundary. Besides the Northern Cheyenne, the Crow, Sioux and Arapaho traditionally lived and hunted throughout the entire project area. The proposed TRRC rail line extension would be located on the eastern shore of the Tongue River and would not directly cross over the Northern Cheyenne Reservation.

3. The Manner Listed Species or Habitat May Be affected, Including Cumulative Effects.

To assist the SEA staff in determining the potential impacts to endangered species from the proposed railroad construction and operation, Historical Research Associates, Inc., (HRA) of Missoula, Montana (with Western Technology and Engineering, Inc.

of Helena, Montana, as HRA's sub-contractor) was designated as the non-Federal representative to prepare a Biological Assessment (BA). SEA asked HRA to work with the U.S. Fish and Wildlife Service in preparing the BA.

The BA which SEA formally submitted to your office, dated June 1995, discusses only TRRC's preferred alignment and concludes that the proposed construction and operation of TRRC's preferred alignment is not likely to adversely affect any of the four endangered species. SEA requested your office's opinion regarding the accuracy of the BA's analysis, the scope of the mitigation, and whether you concur with the determination that the construction and operation of TRRC's preferred alignment is not likely to adversely affect any of the endangered species.[2]

In your letter to me, dated July 12, 1995, you made the determination that the proposed project is not likely to adversely affect the peregrine falcon, black-footed ferret or pallid sturgeon. However, because of possible adverse impacts to bald eagles in the area, you requested that the Commission initiate formal consultation.

Please let us know if you require another copy of the BA.

4. Other Relevant Information.

As you know, the Tongue River Dam and Reservoir are scheduled to be repaired and enlarged. In June 1995, the U.S. Bureau of Reclamation (USBR) issued a Draft Environmental Impact Statement (USBR Draft EIS) regarding this project. The USBR Draft EIS included discussions of the proposed TRRC extension and possible cumulative effects of railroad construction and operation which could occur simultaneously with the dam and reservoir repair project. A Biological Assessment was attached to the USRB Draft EIS and concluded that the dam and reservoir repair project would not adversely affect the bald eagle, peregrine falcon, piping plover, least tern, pallid sturgeon or black-footed ferret.

---

[2] After numerous revisions to the BA and consultations with HRA, SEA still tended to believe that some of the BA's conclusions did not flow from the discussion of potential impacts. It seemed to the SEA staff that the proposed railroad construction and operation could adversely affect the bald eagle. We did not think the proposed railroad construction and operation would adversely affect the pallid sturgeon or peregrine falcon. We did not know whether the proposed railroad construction and operation would adversely affect the black-footed ferret.

The impacts from the dam and reservoir repair project appear to be significantly different compared to the impacts from TRRC's proposed railroad extension. The dam and reservoir repair project impacts will be short-term for the duration of the repair activities. Although the railroad construction impacts may be short-term as well, impacts from railroad operations will continue for the life of the rail line, a projected term of 20 years or more.

We look forward to working with you and your staff throughout the formal consultation process. If we need to provide more information or if we can be of further assistance, please do not hesitate to call me or Dana White, the project leader for this case, at (202) 927-6214.

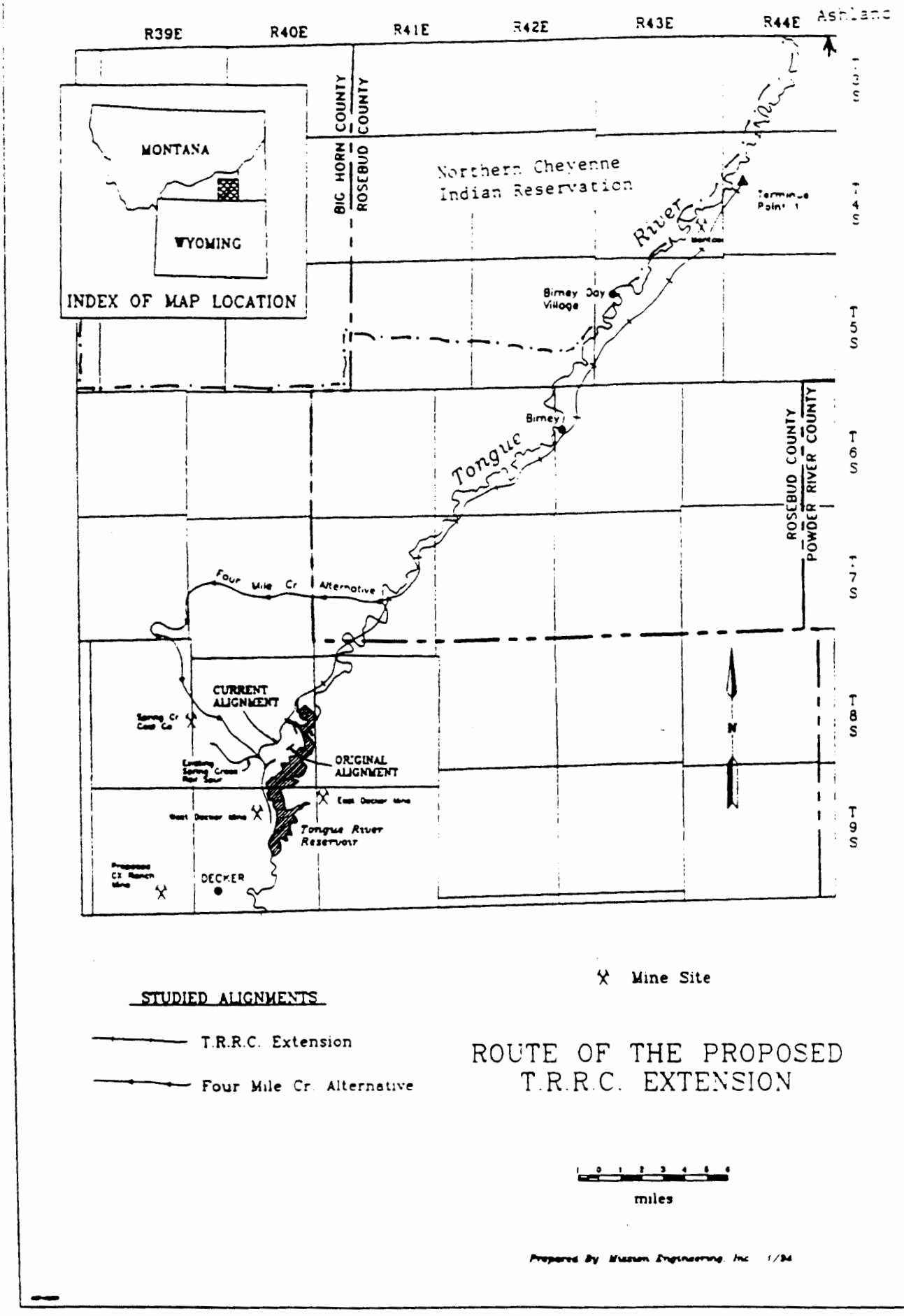
Sincerely yours,

Elaine K. Kaiser
Chief
Section of Environmental Analysis

Attachments

dgw\trrc\formal

C-99


R39E
R40E
R41E
R42E
R43E
R44E
Ashland
MONTANA
WYOMING
INDEX OF MAP LOCATION
BIG HORN COUNTY
ROSEBUD COUNTY
Northern Cheyenne
Indian Reservation
Tongue River
Birney Day Village
Birney
ROSEBUD COUNTY
POWDER RIVER COUNTY
Four Mile Cr Alternative
CURRENT ALIGNMENT
ORIGINAL ALIGNMENT
Tongue River Reservoir
DECKER
T4S
T5S
T6S
T7S
T8S
T9S
N
Mine Site
STUDIED ALIGNMENTS
T.R.R.C. Extension
Four Mile Cr. Alternative
ROUTE OF THE PROPOSED
T.R.R.C. EXTENSION
miles
Prepared By Mission Engineering, Inc 1/84

F.D. 30186 (SUB NO. 2)

TONGUE RIVER RAILROAD COMPANY'S PROPOSED EXTENSION BETWEEN ASHLAND AND DECKER, MT

FINAL ENVIRONMENTAL IMPACT STATEMENT

APPENDIX D

JURISDICTIONAL WETLANDS DELINEATION REPORT AND RELATED CORRESPONDENCE

JURISDICTIONAL WETLANDS DELINEATION FOR THE PROPOSED TONGUE RIVER RAILROAD EXTENSION DECKER TO ASHLAND MONTANA

November 10, 1994

Prepared For:

The Tongue River Railroad Company

Billings, Montana

Prepared By:

Western Water Consultants, Inc.

611 Skyline Road
Laramie, Wyoming 82070

701 Antler Drive
Suite 233
Casper, WY 82601

1949 Sugarland Drive
Suite 134
Sheridan, WY 82801

1901 Energy Court
Suite 270
Gillette, WY 82716

Western Water Consultants, Inc.

ABSTRACT

Fourteen sites were assessed for special aquatic and/or wetland characteristics along the proposed and Four Mile Creek alternate routes of the Tongue River Railroad's Decker to Ashland, Montana extension. A total of five sites were found to exhibit jurisdictional wetland characteristics. Along the proposed extension route approximately 2.0 acres of jurisdictional wetlands would be impacted by the railroad right-of-way (ROW), while an additional 1.9 acres would be impacted by the alternate route. A natural spring (Site 13) that is located along the alternate route has been recently manipulated for stock watering purposes and was evaluated as a disturbed site and is not considered in these acreages. Seven of the remaining eight sites investigated are special aquatic sites and are defined as Riparian Zones occupying approximately 3.8 acres along the proposed extension route. Along the alternate route there would be an additional 2.0 acres of Riparian Zones impacted by the rail ROW. Functional values performed by the Riparian sites are primarily associated with flood control and dissipation, and the control of erosive forces. The wetland sites performed these functions as well as provide wildlife habitat, nutrient retention, food chain support, and sediment retention. The table below summarizes the special aquatic sites investigated:

Table - Abstract: Tongue River Railroad Extension, Decker to Ashland, Montana

Railroad R.O.W./Site	Proposed Alignment	Four Mile Creek Alternate Alignment	Site Classification	Acreages of Potential Impact	Functional Value
Site 1 - Hanging Woman Creek	●	●	Riparian Zone	0.12	X
Site 2 - Wall Creek	●	●	Jurisdictional Wetland	1.13	+
Site 3 - Tongue River	●		Riparian Zone	0.89	X
Site Alt. at 3 - Tongue River		●	Jurisdictional Wetland	1.88	+
Site 4 - Tongue River	●		Riparian Zone	0.43	X
Site 5 - Tongue River	●		Riparian Zone	0.78	X
Site 6 - Tongue River	●		Riparian Zone	0.79	X
Site 7 - Tongue River	●		Riparian Zone	0.77	X
Site 8 - Tongue River	●		Riparian Zone	0.54	X
Site 9 - Monument Creek	●		Upland	N/A	N/A
Site 10 - Harris Creek	●	●	Jurisdictional Wetland	0.57	+
Site 11 - Stock Pond	●	●	Jurisdictional Wetland	0.06	+
Site 12 - Stock Pond	●	●	Jurisdictional Wetland	0.20	+
Site 13 - Barber Draw		●	Disturbed Area	N/A	N/A

N/A - Not Applicable + - Major Functional Value X - Minor Functional Value O - No or Minimal Functional Value

Notes: Functional values presented in this Table are based on a summation of those individual values presented in Table 3-1 of this text, and on the uniqueness of the site to the surrounding topography.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

1.0 INTRODUCTION

This wetland delineation and special aquatic site assessment has been prepared for the proposed Decker extension of the proposed Tongue River Railroad. Figure 1-1 shows the location of the proposed extension and the special aquatic sites occurring along the route from the coal mines near Decker to the originally planned terminus near Ashland, Montana.

On October 4 and 5, 1994 Western Water Consultants, Inc. (WWC) of Laramie, Wyoming, performed a field investigation of the proposed extension right-of-way (ROW) from Decker to Ashland, Montana to identify and delineate sites occurring along the proposed extension route exhibiting criteria specified by the Department of Army Corps Of Engineers (COE) as being waters of the United States. Waters of the U.S. include special aquatic sites and jurisdictional wetlands as defined by the COE and Environmental Protection Agency (EPA) (40 CFR 230.3 (q-1,s)). For purposes of this report, all waters of the U.S. occurring along the proposed and Four Mile Creek alternate extension routes were investigated.

The delineation of jurisdictional wetlands along the proposed extension route is to meet the requirements of the Section 404 (b)(1) Guidelines of the Clean Water Act, found in Title 40 of the CFR Part 230. The Interstate Commerce Commission's Section of Environmental Analysis requires that the Tongue River Railroad Company (TRRC) submit a jurisdictional determination for the entire length of the proposed extension area. This will allow the COE to verify and agree to the limit of the jurisdictional waters of the U.S. located on the extension route.

1.1 Definition of Wetlands

Outlined in this section are definitions utilized by the COE for waters of the U.S., special aquatic sites, wetlands, and jurisdictional wetlands. Also presented are the definitions of the three criteria used in classifying these areas.

Waters of the U.S. is a collective term for all areas subject to regulation by the COE pursuant to the Clean Water Act (CWA). Briefly, waters of the U.S. include the territorial seas; interstate waters; navigable waterways; special aquatic sites; headwaters and wetlands that are, have been, or could be used for travel, commerce, or industrial purposes; and tributaries and

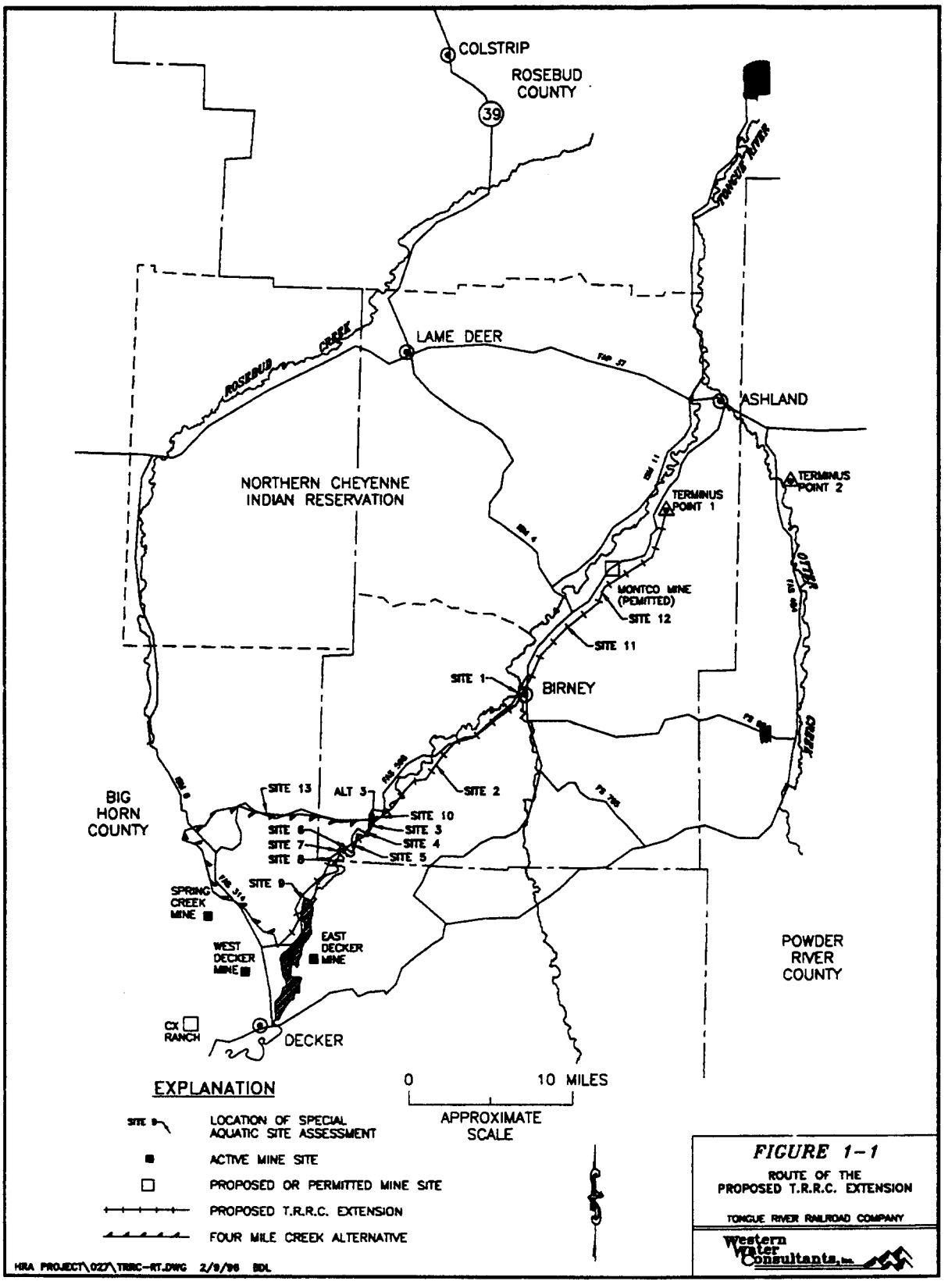


FIGURE 1-1

ROUTE OF THE PROPOSED T.R.R.C. EXTENSION

TONGUE RIVER RAILROAD COMPANY

Western Water Consultants, Inc.

impoundments of such waters. Of particular importance to the report, waters of the U.S. includes "All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds" (40 CFR 230.3(3)).

Special aquatic sites are a subset of waters of the U.S.; they are "geographic areas, large or small, possessing special ecological characteristics of productivity, habitat, wildlife protection, or other important and easily disrupted ecological values" (40 CFR 230.3 (q-1)). Special aquatic sites include sanctuaries and refuges, mud flats, vegetated shallows [aquatic bed], coral reefs, pool and riffle complexes, and wetlands. Special aquatic sites are subject to the same COE regulations as jurisdictional wetlands.

Wetlands are a subset of special aquatic sites. The CWA defines wetlands as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (40 CFR 230.41(a)(1)).

Riparian Zone is a term that has been used to describe areas found between upland areas and aquatic or deep water areas. The term "riparian zone" is used in this assessment to categorize the area that exists between the river and the uplands. Experts in riparian ecology, a new scientific discipline that developed in the arid west, use the term "riparian area [zone]" to include both riparian wetlands and non-riparian wetlands. Regardless of how broadly or narrowly one defines the term, riparian areas are functionally and technically wetlands because they support inflowing water from either perennial, intermittent or ephemeral sources (Hansen 1988).

Riverine habitat includes aquatic habitat and streambars. Most riparian habitat occurs on floodplains, levees and swales within the valley bottom. Streambanks are the interface between riverine and riparian habitats. Some riparian habitat is wetland. Upland vegetation, sometimes complimented by facultative hydrophytes, is prevalent in other riparian habitat that is not wetland (Jensen, Platts 1990).

Jurisdictional wetlands are "[t]hose wetlands which are within the extent of COE regulatory overview" (33 CFR 328.1 and 2). At the present time, wetland determinations are to be based on the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory

1987). The 1987 manual presents standardized methods for identifying jurisdictional wetlands. Therefore, the results and conclusions presented in this report are based on data interpretation through application of the 1987 COE manual.

To be subject to COE jurisdiction, a wetland must meet three criteria. It must have 1) a dominance of hydrophytic plants, 2) the presence of hydric soils, and 3) the presence of surface or subsurface water (i.e., wetland hydrology) to support 1 and 2 (above). The occurrence of jurisdictional wetlands is based on the technical criteria of hydrophytic vegetation, hydric soils, and wetland hydrology as outlined in the COE 1987 manual.

Hydrophytic plants are those species that either require or tolerate wet or saturated soils and are therefore indicative of these conditions. Vegetation on a given area is a good indicator of the physical conditions of the site. Such conditions include soil moisture. In order for vegetation on a given area to be considered hydrophytic, more than 50% of the total vegetal cover and/or species must be comprised of species typically adapted for life in saturated soil conditions. Such species have been assigned a wetland indicator status which represents their occurrence in wetland environments. Obligate Wetland Plants (OBL) occur in wetlands >99% of the time, Facultative Wetland Plants (FACW) 66-99%, and Facultative Plants (FAC) 34-66%. Therefore, the relative vegetal cover provided by these species and/or wetland species composition must exceed 50% in order for the area to be dominated by wetland vegetation. Nonwetland or upland vegetation indicator occurrence status criteria are Facultative Upland Plants (FACU) 1-33% and Obligate Upland Plants (UPL) <1%. Disturbed wetland sites may be covered by species with FAC, FACU, and/or UPL indicator status due to the invasive character of such species. Therefore, a careful evaluation of soil character and site hydrology must be made to determine if hydrophytic vegetation would be present under normal circumstances if the disturbance had not occurred.

A **hydric soil** is saturated, flooded, or ponded with water long enough during the growing season (i.e., soil temperature ≥ 41° F at 20 inches depth) to develop reduced oxygen levels. Such soils develop certain characteristics that are indicative of the wet and anaerobic conditions. Characteristics include an undecomposed organic surface layer (histic epipedon), surface horizons with low chromas (e.g., very dark brown to black), organic staining and streaking (gleying), grey layers or horizons, iron and manganese concretions, and/or light grey or rust-

colored mottles or specks of highly contrasting color (Environmental Laboratory 1987). These characteristics must generally occur within 50% of the root zone.

Wetland hydrology includes permanent or periodic inundation or saturation of the soil surface for a significant period during the growing season on a regular basis. Wetland hydrology may be supplied by surface water (i.e., streams), groundwater, and/or direct precipitation. In cases of saturation from inundation, the saturation generally must occur with a two-year frequency interval, or 50 years out of 100 years. The criterion that sets the threshold to determine whether or not an area has wetland hydrology is saturation within 50% of the root zone for forb and graminoid species. In addition, saturation must occur for 12.5% of the growing season (Environmental Laboratory 1987).

1.2 Administrative Responsibility for and Regulation of Wetlands

Waters of the U.S., including special aquatic sites and jurisdictional wetlands, are protected and regulated under the CWA. Pursuant to Section 404 of that act, the COE has specific administrative authority to regulate the discharge of dredge and fill materials into waters of the U.S., including wetlands. The EPA, having overall administrative authority over the CWA, has review and veto authority over all actions pursuant to the CWA. Pursuant to various rules, regulations, and memoranda of understanding, other agencies such as the Forest Service (FS), Fish and Wildlife Service (FWS), and Bureau of Land Management (BLM) may exercise review responsibilities, if appropriate, on projects requiring major federal action involving wetlands. Information developed on the occurrence and type of wetlands involved in a project assists these agencies in reviewing a project and in making administrative recommendations to the COE and EPA. Implementation of the methodology developed for identifying jurisdictional wetlands, as described in the Methods section, usually arrives at the conclusion on the presence or absence of jurisdictional wetlands for a given site.

2.0 METHODS

The wetland delineation and special aquatic site assessment of the proposed and alternate extension routes was conducted in two phases. The first phase involved the review and orientation of background data of the area generated as a result of previous investigations and assessments. The second phase involved the field reconnaissance investigation to identify and delineate special aquatic sites.

2.1 Background Data Review

The published Soil Surveys of Bighorn County and the unpublished soil survey maps of Rosebud County were obtained from the Soil Conservation Service in Montana regarding the soil taxonomy and series/phase. A list of the distribution of hydric soils was reviewed for the proposed and alternate extension routes. Hydrologic patterns were studied using United States Geological Survey (USGS) maps for the Tongue River Drainage and National Wetland Inventory (NWI) maps were reviewed for potential specific site classifications. USGS maps were taken to the field for aid in assessing and mapping of the proposed extension route. Aerial photos taken during July 1973 were also used during the data review.

2.2 Field Reconnaissance

The site-specific field investigations occurred along the proposed and alternate extension routes on October 4 and 5, 1994. Five of the fourteen sites (1, 6, 7, 8, and 10) were not accessible during the field investigations. Access to the five sites was denied by the respective property owners. These unaccessible sites were viewed from the county road which is in close proximity to the sites. All sites which access was denied were characterized utilizing nearby sites of similar appearance, topography and habitat types, and were assessed for the necessary criteria in order to make a wetland determination.

In accordance with the COE's Wetland Delineation Manual, January 1987, the routine site investigation method was used for the investigation due to the presence of very distinct wetland/upland transition boundaries at most sites. All sampling points were placed in

representative locations to obtain the most relevant and optimal information possible for that specific site.

Initial site-specific assessments began with a vegetative cover inventory of each representative species occurring at the site. Species indicator status with respect to wetland or nonwetland was recorded along with its percent composition within the sample area relative to all other species present. Due to the late stage in the growing season and grazing by livestock, there was found to be a wide variation in the density and quality of the vegetation sampled.

Soil observation pits were dug to depths of 40 cm. A Munsell Color Chart (Kollmorgan Corp. 1975) was used to identify soil color, mottling and gleying. Soil texture, including soil composition such as clay, silts, or sands, was noted, and other characteristics of hydric soils such as organic matter and staining were recorded on the site specific field forms.

A site specific wetland delineation field form was completed for sites that were accessible and that exhibited potential for jurisdictional wetland characterization. These sites along the extension route were photographed with color film and a video tape was recorded to document the current condition of each site. Appendix B contains the field forms generated during this assessment.

In addition, each site investigated was characterized in accordance with the Cowardin et al. 1979 Classifications of Wetlands and Deep Water Habitats. Table 2-1 represents those classes into which the sites are characterized. Information was gathered at each site to determine the functions and valves performed by each site. Possible functions performed by wetlands include groundwater discharge and recharge, flood storage and desynchronization, shoreline anchoring and dissipation of erosive forces, sediment trapping, nutrients retention and removal, food chain support, wildlife and fish habitat, heritage values including active and passive recreation, and socioeconomic qualities or benefits. These attributes may be similar between jurisdictional and nonjurisdictional.

Table 2-1 - Special Aquatic Site Classification along the Proposed Tongue River Railroad Extension Route Per Cowardin et al. (1979)

Special Aquatic Site	Cowardin Classification	Cowardin Abbreviation
Wetland	Palustrine-Emergent-Persistent Temporary, artificial, excavated	PEM1A/Kx
	Palustrine-Emergent-Persistent Broad leafed, seasonally flooded diked	PEM6EH
	Palustrine-Emergent-Persistent seasonal, saturated	PEM1E
	Palustrine-Emergent, narrow leafed persistent, seasonal	PEM5C
	Palustrine-Forested-Broad leafed deciduous - Temporary	PFO1A
	Palustrine-Emergent, narrow leafed persistent, semi-permanent, diked	PEM5Fh
Seasonally Flooded Basin or Mud Flat	Palustrine-Flat, mud, seasonally flooded, diked	PFL3Ch
	Palustrine-Open Water, semi-permanent diked	POWFh
River Riparian Zone	Riverine-Lower perennial-streambed, vegetated, cobble gravel, intermittently flooded	R2SB1J
	Riverine-Lower, perennial, open-water, intermittently exposed bank	R20WG
	Palustrine-Forested broad leafed deciduous, temporary	PF01A
	Palustrine-Scrub/Shrub broad leafed deciduous - temporary	PSS1A

3.0 RESULTS

This section begins with definitions of the four categories into which the sites investigated along the proposed extension and alternate routes are grouped. All sites investigated that meet the specific definition are presented immediately thereafter. Definitions are presented for sites, where all three wetland criteria are met, and are representative of special aquatic sites as defined by the COE and EPA.

Additional information pertaining to each site is contained in Appendix A. The sites are characterized according to the COE definitions of special aquatic sites and its subsets. Figures A-1 through A-13 represent the individual sites that were characterized during the investigation with photos, topographic mapping and text evaluation (Appendix A). Soils were assessed using the Soil Survey of Big Horn County Area, Montana, soil survey mapping obtained from the SCS office in Forsythe, Montana, and telephone discussions with agency personnel. Vegetative indicator status was obtained using the National List of Plant Species That Occur in Wetlands: Northwest (Region 9) May 1988. The Cowardin classification system which is abbreviated in Table 2-1 is also utilized on the figures in Appendix A to classify each site.

3.1 Special Aquatic Site Definitions

Wet Meadow. A wet meadow site is characteristic of a COE's classified wetland, consisting of almost 100% hydrophytic, OBL wetland vegetation. Hydric, anaerobic soils are present and are thus supported by a hydrologic cycle which allows the area to be inundated by water during most if not all of the growing season. A wet meadow typically does not have any open or ponded water for a significant portion of the growing season.

Sites 2 and 10 along the proposed extension and the Alternate of Site 3 (Alt. at 3), that is along the Alternate route alignment meet the wet meadow classification. These three sites do satisfy the COE definition and are further classed as Jurisdictional Wetlands, meeting the criteria for 1) hydrophytic plants, 2) hydric soils and 3) wetland hydrology. Sites 2 and 10 along the proposed extension cover approximately 1.7 acres. Site Alt. at 3 occupies 1.9 acres of wetlands.

River Riparian Zone. River riparian zones are areas with a high water table and are associated with open free-flowing or standing water bodies. Riparian areas are the

transition/ecotone area between the upland and aquatic ecosystems. According to Johnson and McCormick (1979), "Riparian ecosystems are uniquely characterized by the combination of high species diversity, high species densities and high productivity. Continuous interactions occur between riparian, aquatic, and upland terrestrial ecosystems through exchanges of energy, nutrients, and species."

A total of seven sites investigated along the proposed extension route can be defined as River Riparian Zones. Sites 1, 3, 4, 5, 6, 7, and 8 all meet criteria and are considered the zone of transition between the aquatic and upland ecosystems. These sites are associated with waters of the U.S. and occupy 3.8 acres along the proposed route and 2.0 acres along the alternate route.

Seasonally Flooded Basins or Mudflats. Seasonally flooded basins or mudflats are those sites which typically have free standing ponded water or are water logged during most if not all the growing season. Seasonally flooded basins or mudflats occur in upland depressions and/or lows. Water associated with these sites is typically supplied by precipitation events which results in water ponding in these topographic depressions.

Sites 11 and 12 both occupy topographic low areas and subsequently collect and pond water. This ponding/inundation by water has created a hydric soil and if grazing pressure was decreased a hydrophytic vegetative cover would develop. Sites 11 and 12 were created by diking the natural drainage, creating stock ponds. Sites 11 and 12 can be further classified in accordance with the COE Jurisdictional Wetlands and occupy approximately 0.19 and 1.02 acres respectively.

Uplands. The topography varies along the proposed and alternate extension routes from gentle to steep slopes. Plant cover in the upland areas is dominated by shrub and grassland species, while in the bottomland and drainage areas deciduous shrubs and trees are present. Examples of the uplands occurring along the extension route are evident in the photos taken of most sites. Site 9 is characteristic of the upland ecosystem occurring along the proposed extension.

3.2 Functions and Values

Wetlands are unique in that they represent both a predominantly terrestrial setting and a depositional environment located in an otherwise eroding landscape. Because uplands are intrinsically erosional landforms, they deposit sediments into the wetlands. Thus, the wetlands act as traps and filters for the erosional by-products of the surrounding landscape. Table 3-1 lists these functions and rates the project area wetlands according to their apparent value based on Adamus and Stockwell (1983).

The assessment of the TRRC sites found that the river riparian sites had the highest values for shoreline anchoring and dissipation of erosive forces. The riparian vegetation along the river anchors and protects the soil on the channel banks from the erosive forces during higher flows and overbank flooding.

High values of the river riparian sites were for wildlife habitat; this includes overhanging banks that provide cover and shading for fish. The variety and quantity of vegetation provides forage for ungulates as well as food and habitat for waterfowl and possibly upland birds. Another value of importance is that of heritage and some recreational values provided by the river riparian zones. The river riparian zones provide color, form and contrast that is pleasing and interesting to observe. In addition, wildlife are drawn to these areas providing additional aesthetic opportunities for sightseeing and sport. The actual value of all sites investigated for sporting activities is low due to the controlled access by private property owners.

The wetland sites at 2, Alt. at 3, 10, 11, and 12 provide many more values than do the river riparian zones. Where the river riparian zones attributes are of aesthetic and protective values, the wetlands provide functional attributes including nutrient retention, sediment trapping, important habitat for waterfowl, and forage for ungulates.

Table 3-1 - Estimated Functional Values for Riparian Zones and Wetlands within the TRRC Project Area

SITES BY COMMUNITY TYPE	FUNCTION[1]								
	GWR	GWD	FSD	SAD	SED	NRR	FCS	HAB	REC
River Riparian Zone									
Site 1	O	O	+	+	X	+	+	+	+
Site 2	O	O	X	+	X	+	+	+	X
Site 3	O	O	+	+	X	+	X	X	X
Site 4	O	O	X	+	X	X	X	X	X
Site 5	O	O	X	+	X	X	X	X	X
Site 6	O	O	X	+	O	X	X	X	0
Site 7	O	O	X	+	O	X	X	X	0
Site 8	O	O	O	+	O	X	X	X	X
Wetlands									
Site 2	0	+	+	O	+	+	X	+	O
Site 3 Alt.	0	X	X	+	+	+	+	+	X
Site 10	O	+	X	+	+	X	X	X	O
Site 11	X	O	+	X	+	+	X	X	O
Site 12	X	O	+	X	+	+	X	X	O

[1] Wetland and Special Aquatic Site Functions (Adamus and Stockwell 1983).

+ - Major Functional Value
X - Minor Functional Value
O - No or Minimal Functional Value

GWR = Ground Water Recharge
GWD = Ground Water Discharge
FSD = Flood Storage and Desynchronization
SAD = Shoreline Anchoring and Dissipation of Erosive Forces
SED = Sediment Trapping
NRR = Nutrient Retention and Removal
FCS = Food Chain Support
HAB = Wildlife and Fish Habitat
REC = Active and Passive Recreation and Heritage Value

4.0 SUMMARY AND CONCLUSIONS

Fourteen sites were investigated to determine if the criteria defined by the COE and EPA for special aquatic sites and/or wetlands existed along the proposed and Four Mile Creek alternate routes to the Tongue River Railroad Decker to Ashland Montana extension. Five of the sites investigated are common to both the proposed and alternate routes. Seven sites are unique to only the proposed extension while two are unique only to the alternate route. Vegetation, soils, and area hydrology were examined at most sites, while other inaccessible sites were viewed from close proximity and were assessed based on accessible sites with similar topography and location. A total of seven sites investigated on the river are classified as River Riparian and are classed as Open Water Habitats and considered Waters of the United States.

All seven River Riparian Zones occur along the proposed extension route and represent a total of approximately 3.8 acres that would potentially be impacted by the railroad ROW. The primary functions performed by these seven riparian zones include: shoreline anchoring and dissipation of erosive forces. They also provide habitat for fish and wildlife, aquatic and terrestrial birds and mammals.

Five of the remaining sites include wet meadows, wetlands and wetlands/riparian zones and are classified as Jurisdictional Wetlands and occupy approximately 2.0 acres along the proposed extension, and 1.9 acres along the alternate route which would be impacted by the ROW. The functional values of these Jurisdictional Wetlands including nutrient retention, sediment trapping, water fowl habitat and forage for ungulates in addition to those functions mentioned for the riparian zone.

Two sites were found to be other than wetlands. The first, site 9, is an upland site although it has potential to become a wetland sometime in the future based on inundation by Tongue River reservoir and/or ponding by the fill created by the railbed. The other site, Barber Draw, had it not been disturbed, would have been classified as a Jurisdictional Wetland.

REFERENCES

Adamus, P.R. and L.T. Stockwell. 1983. A Method for Wetland Functional Assessment. Federal Highway Administration, U.S. Dept. of Transportation, FHWS-IP-82-23.

Cowardin, L.V. Carter, F. Golet, and E. LaRoe, 1979. Classifications of Wetlands and Deep water Habitats of the United States. USDI Fish and Wildlife Service. FWS10BS-79/31, Washington, D.C., 103 pp.

Environmental Laboratory. 1987. Corps of Engineers Wetland Delineation Manual. U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS. Tech. Rpt. Y-87-1. 100 pp. plus appendices.

Hansen, P.L. 1988. Conflict in the Riparian Zone: The Effects and Challenges of Agricultural Use. Western Wildlands, Vol.14 No. pg. 12-16.

Jensen, S.E. and W.S. Platts. 1990. Restoration of Degraded Riverine/Riparian Habitat in the Great Basin and Snake River Regions. Wetland Creation and Restoration: The Status of the Science, Island Press, ppg.367-399.

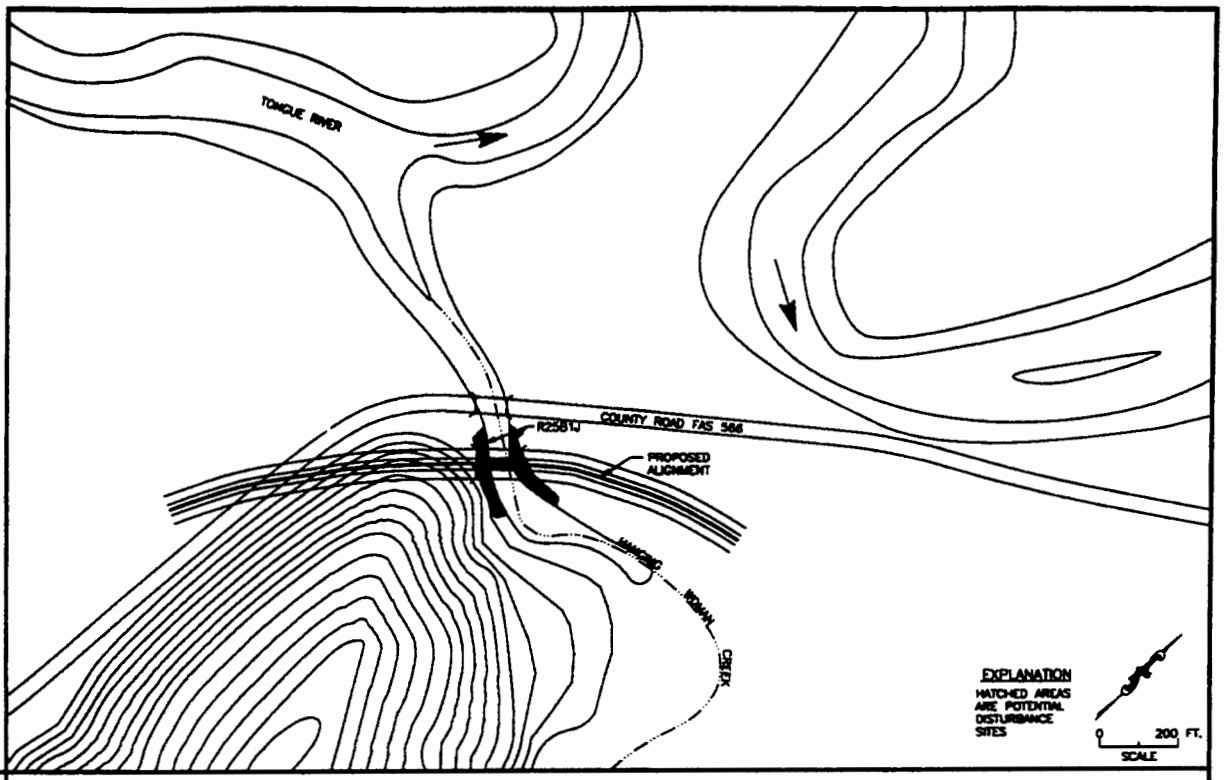
Johnson, R. R., and J. F. McCormick, (tech. Coord.) 1979. Strategies for the Protection and Management of Floodplain Wetlands and Other Riparian Ecosystems, Proceedings of the Symposium Callaway Gardens, Georgia, December 11-13, 1978, U.S. Forest Service General Technical Report WO-12, Washington, D.C., 410 p.

Kollmorgen Corp. 1975. Munsell Color Chart.

National List of Plant Species that Occur in Wetlands: Northwest (Region 9) 1988. U.S. National Ecology Research Center Fort Collins, Colorado, May, 1988.

33 CFR 330, 1991. Federal Register, Vol. 51, No. 219. Dept. of Defense. Corps of Engineers, Dept. of the Army.

40 CFR 230, 1990. Code of Federal Regulations. U.S. Govt. Printing Office.



Site 1 is located in NW1/4 NW1/4 Sec. 18, T6N, R43E. Site 1 is the proposed Hanging Woman Creek bridge. The actual location of the railroad alignment was not accessible at Site 1. All assessment information was obtained from County Road FAS 566 bridge adjacent to Site 1. Site 1 consists of the Hanging Woman Creek channel which is approximately 20 feet wide with an average water depth of approximately 10 inches. Water was ponded and still. Site 1 is dominated by Acer sp., Salix sp. and Populus Sp. in the tree/shrub layer and Spartina sp., Carex/Juncus sp. in the grasses. The creek banks are lush with vegetation and represent a Riparian Zone–R2SB1J(Riverine – lower perennial – streambed, vegetated, cobble, intermittently flooded) transition between the aquatic and upland ecosystems.

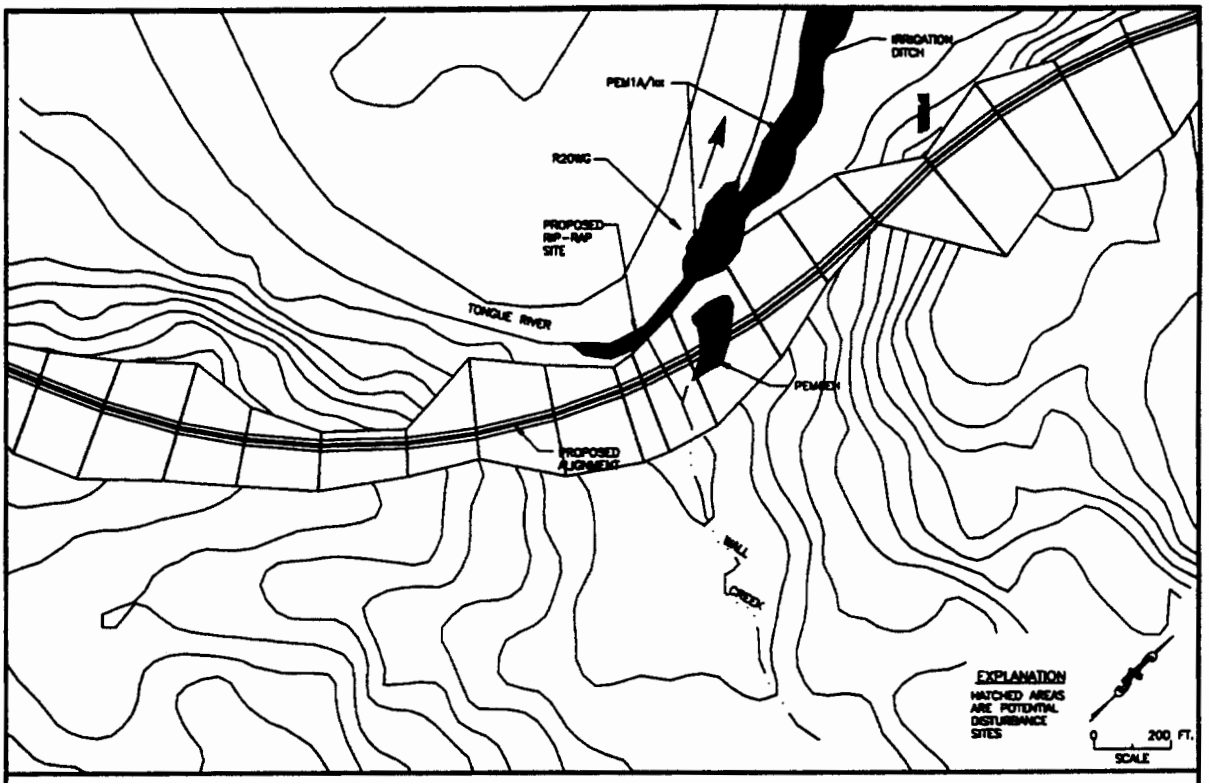
FIGURE A–1

SITE 1
HANGING WOMAN CREEK
BRIDGE SITE

TONGUE RIVER RAILROAD COMPANY

Western Water Consultants, Inc.

H:\RA PROJECT\027\SITE1.DWG 2/9/88 SOL



Site 2 is located in NW1/4 NW1/4 Sec. 5, T7S, R42E. Site 2 is proposed to be a rip-rap area thru Wall Creek along the Tongue River bank. Wall Creek, at the area of the railroad alignment, is represented by the current active channel that was diverted away from the irrigation ditch inlet on the river and a historic channel. A diversion from the Tongue River has been created in this area to supply water to an irrigation ditch. Wall Creek is an ephemeral creek dominated by Salix sp., Acer sp. and Populus sp. in the tree/shrub layer. Spartina pectinata, Carex sp. and Juncus sp., and Rumex sp. are present in the grass/forb layer. The diversion, associated drainage ditch, and mosaic of river (Riparian zone-R2OWG(Riverine - lower perennial, open water, intermittently, exposed bank)), are interlinked with Jurisdictional Wetland-PEM1A/Kx & PEM6Eh(Palustrine - emergent persistent, broad leafed, seasonally/temporarily, flooded, artificial, diked, excavated) areas which occur in the historic Wall Creek channel and irrigation ditch.

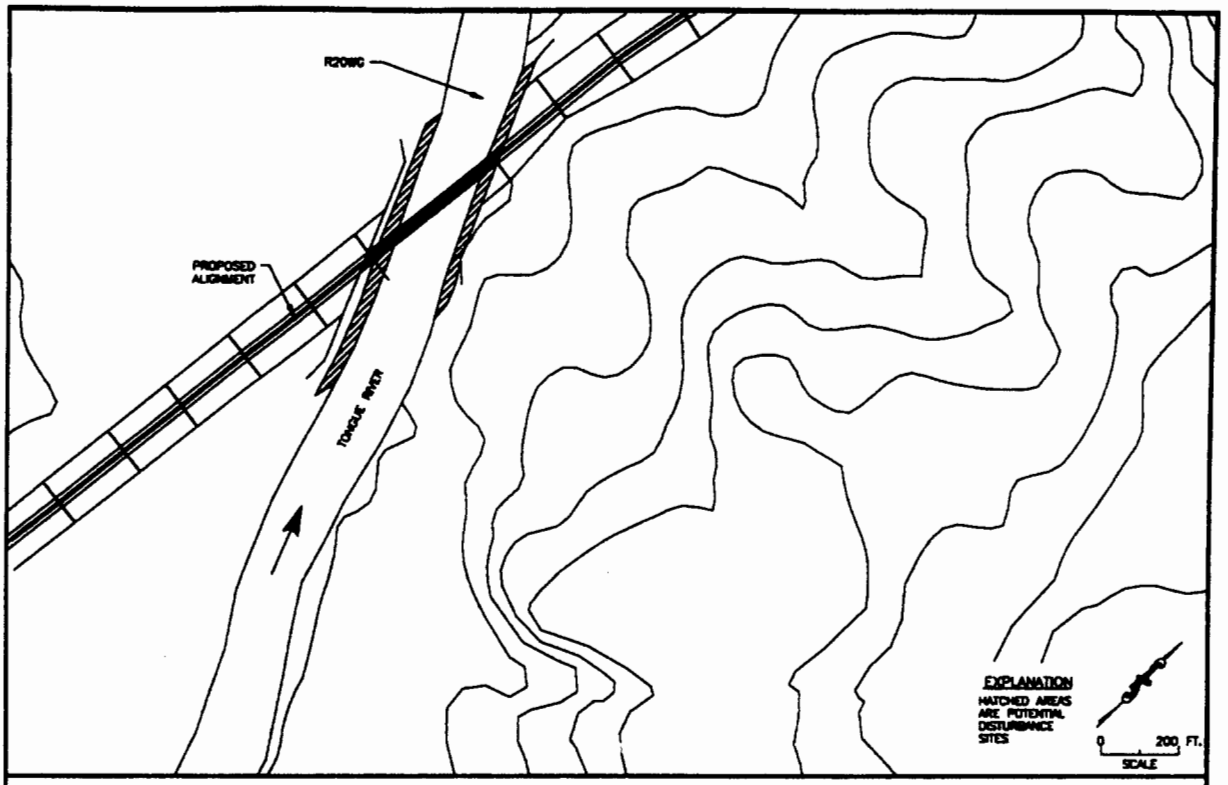
FIGURE A-2

SITE 2
PROPOSED RIP-RAP SITE AND
WALL CREEK CROSSING

TONGUE RIVER RAILROAD COMPANY

Western Water Consultants, Inc.

HRA PROJECT\027\SITE2.DWG 2/9/98 BDL



Site 3 is located in NE1/4 NE1/4 Sec. 27, T7S, R41E. Site 3 is a proposed Tongue River bridge location. Site 3 is characterized by a Riparian Zone–R2OWG (River bank) with Salix sp. and Spartina pectinata dominating in the tree/shrub and grass/forb layers respectively.

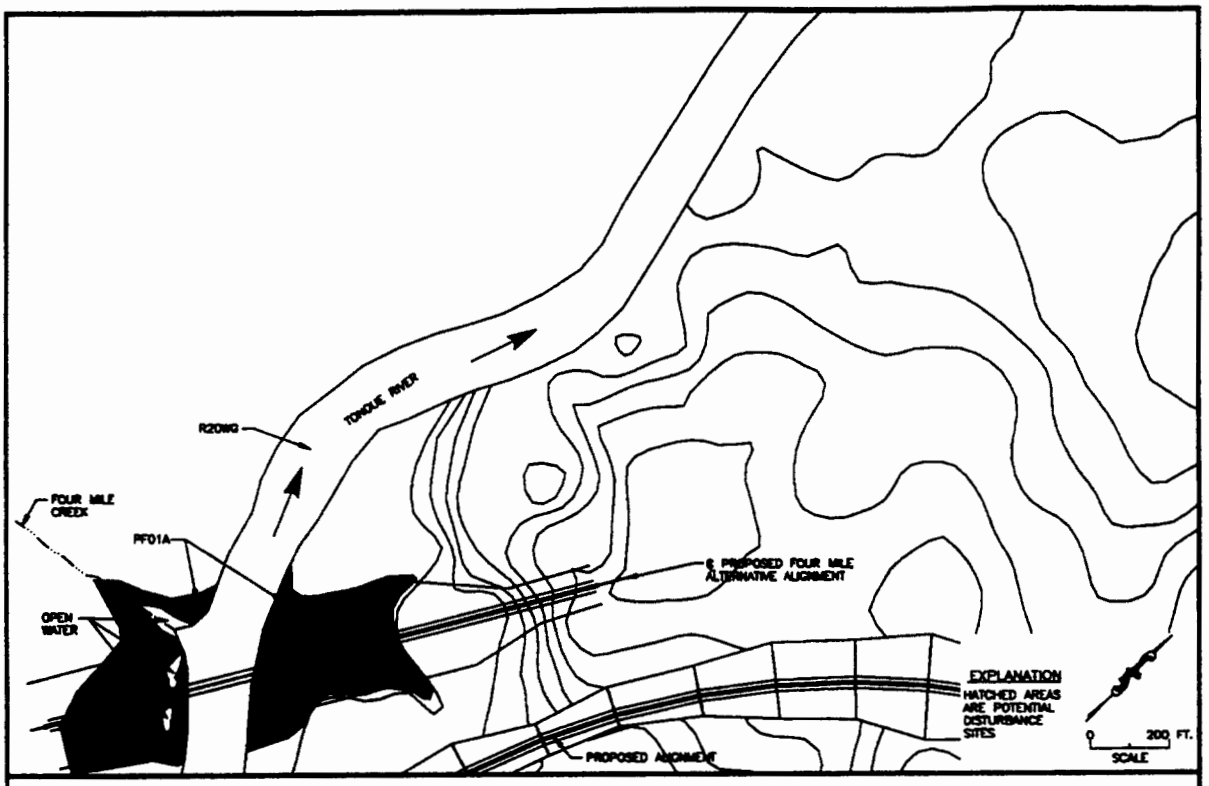
FIGURE A–3

SITE 3
PROPOSED TONGUE RIVER
BRIDGE LOCATION

TONGUE RIVER RAILROAD COMPANY

Western Water Consultants, Inc.

HRA PROJECT\027\SITE3.DWG 2/9/96 BDL



Alternate Route at Site 3 is located in the NE1/4 NE1/4 Sec.27, T7S, R41E. The alternative route to the proposed extension of the Tongue River railroad, is a mosaic of open standing water, Riparian Zones–PF01A (Palustrine – forested, brood leafed deciduous temporary) and Jurisdictional Wetlands–PEM1E (Palustrine – emergent, persistent seasonal saturated). The site is dominated by Populus sp., Acer sp. and Salix sp. in the tree/shrub layer and Spartina pectinata in the grass/forb layer. Soils assessed in the Wetland areas exhibited hydric conditions.

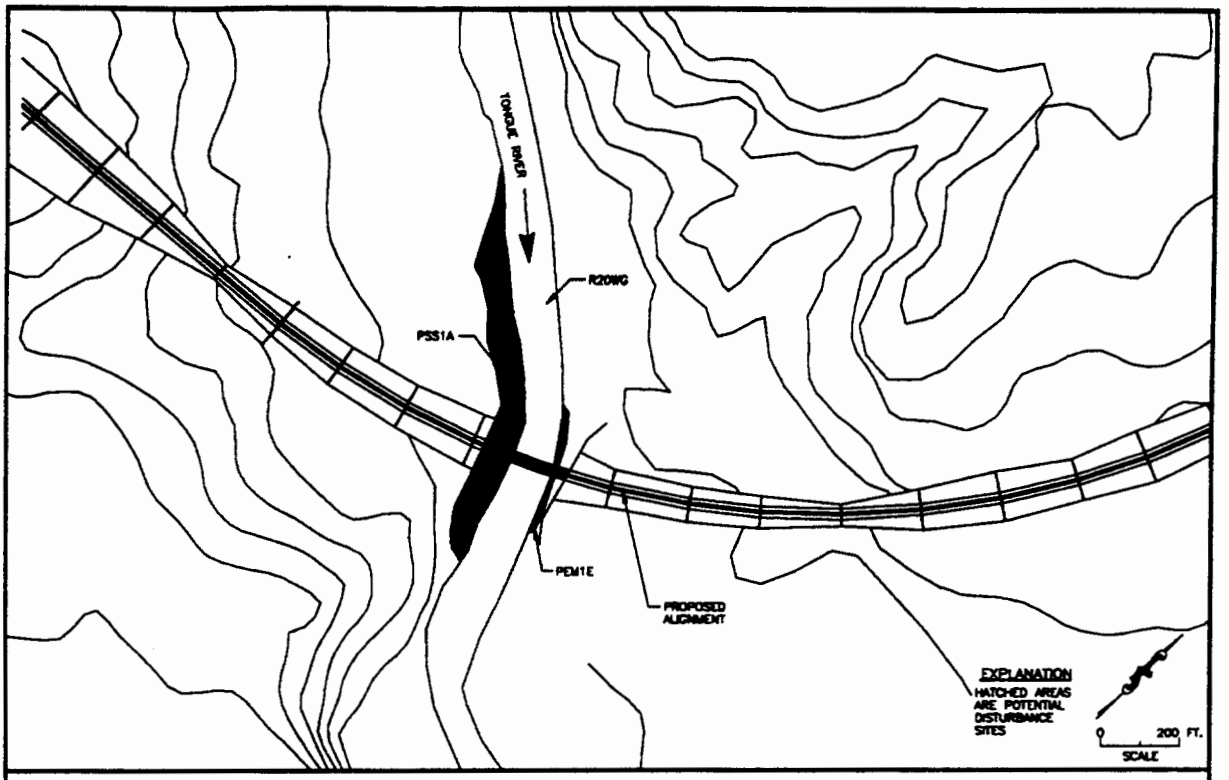
FIGURE A–ALT. AT 3

ALTERNATE SITE 3
PROPOSED TONGUE RIVER
BRIDGE LOCATION

TONGUE RIVER RAILROAD COMPANY

Western Water Consultants, Inc.

NRA PROJECT\027\ALT3.DWG 2/8/96 BDL



Site 4 is located in NW1/4 NW1/4 Sec. 34, T7S, R41E. Site 4 is a proposed Tongue River bridge location. Site 4 is characteristic of the Riparian–PSS1A & R20WG (Palustrine – scrub/shrub broad leafed deciduous, temperate) on the west bank which is approximately 60 feet wide and Wetland–PEM1E on the east bank. The railroad alignment at Site 4 would span both riparian zones which consist of only grass and forb species, no trees or shrubs are present.

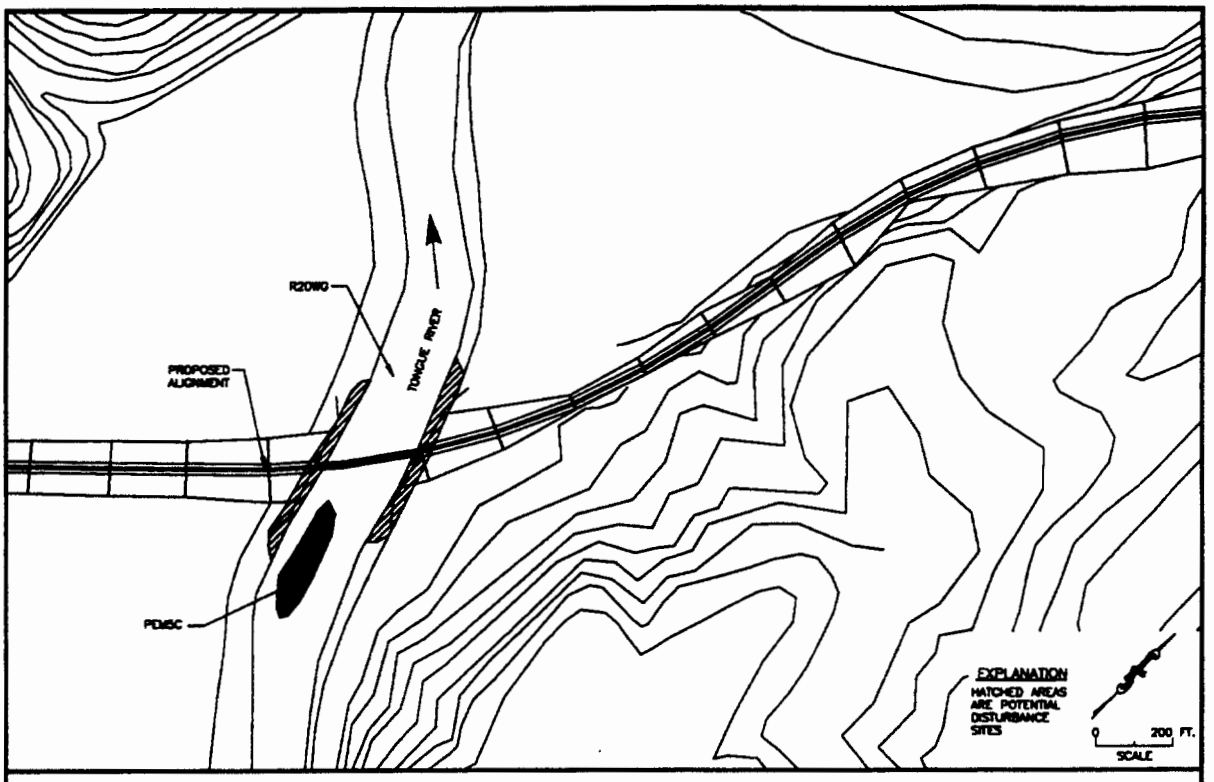
FIGURE A–4

SITE 4
PROPOSED TONGUE RIVER
BRIDGE LOCATION

TONGUE RIVER RAILROAD COMPANY

Western Water Consultants, Inc.

HRA PROJECT\027\SITE4.DWG 2/9/96 BDL



Site 5 is located in the center Sec. 33, T7S, R41E. Site 5 is a proposed Tongue River bridge location. Access was granted to this site, which allowed a thorough assessment to be performed. Site 5 is dominated by Spartina pectinata with occurrences of Andropogon gerardii and Equesitum sp. in the grass/forb layer. No trees or shrubs exist on the banks of the proposed railroad alignment. An island in the center of the river just upstream of the site is a Jurisdictional Wetland–PEM5C (Palustrine–emergent, narrow leafed persistent, seasonal). Site 5 is characteristic of a Riparian Zone–R20WG (River bank) associated with the Tongue River.

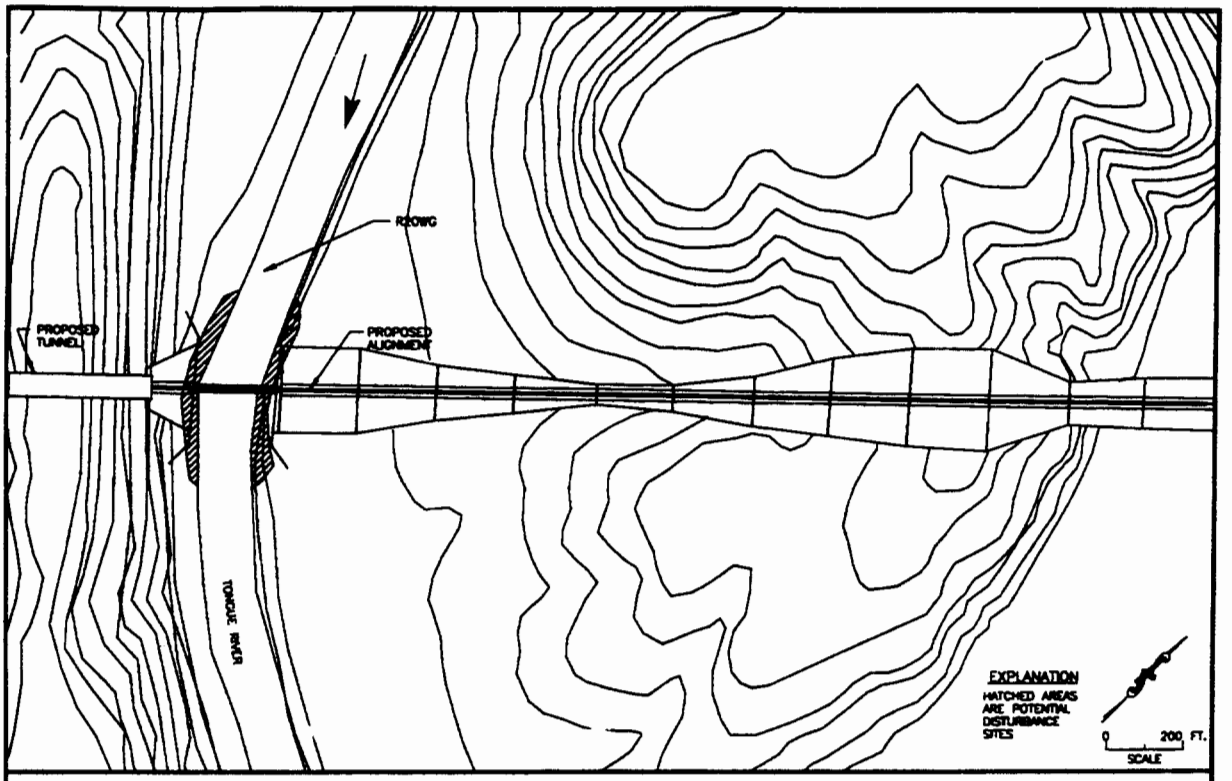
FIGURE A–5

SITE 5
PROPOSED TONGUE RIVER
BRIDGE LOCATION

TONGUE RIVER RAILROAD COMPANY

Western Water Consultants, Inc.

HRA PROJECT\027\SITES.DWG 2/9/96 BDL



Site 6 is located in NE1/4 NE1/4 Sec. 32 T7 1/2S, R41E. Site 6 is a proposed Tongue River bridge location leading to/from the proposed tunnel on the extension route. Access to Site 6 was denied, all assessment information was obtained from similar sites downstream of the proposed route and by viewing Site 6 from the county road. Site 6 is characteristic of a Riparian Zone–R20WG (River banks) with a very abrupt, narrow transition zone on the southwest/tunnel side of the river. Rocky Mountain Juniper are present at Site 6 within approximately 10 feet of the Tongue River's edge.

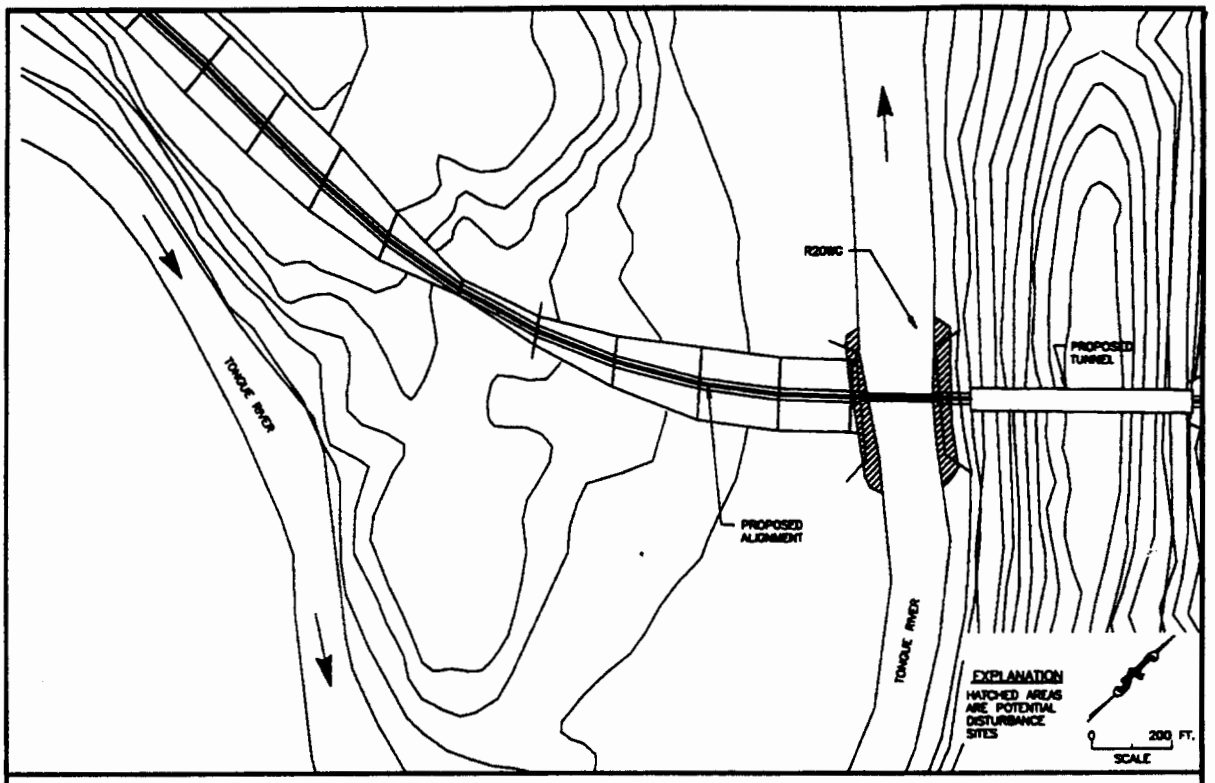
FIGURE A–6

SITE 6
PROPOSED TONGUE RIVER
BRIDGE LOCATION

TONGUE RIVER RAILROAD COMPANY

Western Water Consultants, Inc.

HRA PROJECT\027\SITE6.DWG 2/9/98 BDL



Site 7 is located in SW1/4 NE1/4 Sec. 32, T7 1/2S, R41E. Site 7 is a proposed Tongue River bridge location leading to/from the proposed tunnel on the extension route. Access to Site 7 was denied, all assessment information was obtained from similar sites along the proposed route and by viewing Site 7 from the county road. Site 7 is characteristic of a Riparian Zone– R20WG (River banks) with a very abrupt, narrow transition zone on the northeast/tunnel side of the river.

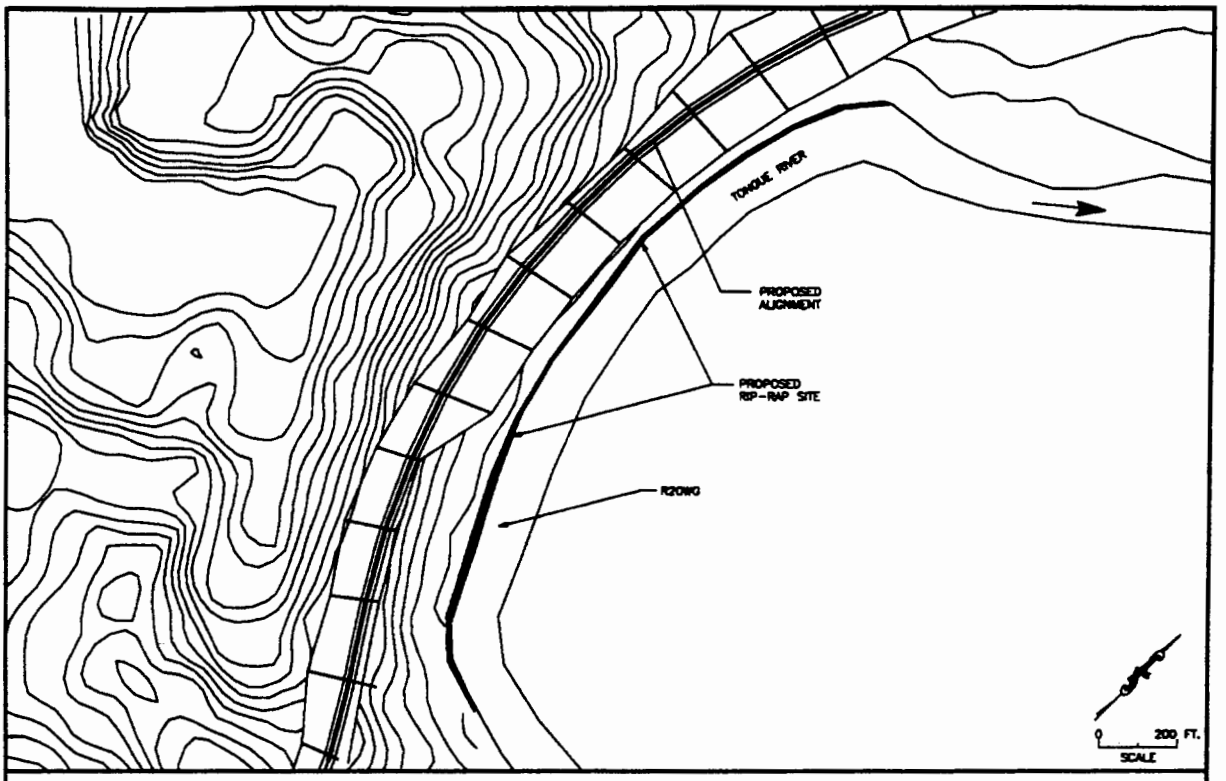
FIGURE A–7

SITE 7
PROPOSED TONGUE RIVER
BRIDGE LOCATION

TONGUE RIVER RAILROAD COMPANY

Western Water Consultants, Inc.

HRA PROJECT\027\SITE7.DWG 2/9/96 BDL



Site 8 is located in SW1/4 SW1/4 Sec. 32, T7 1/2S, R41E. NE1/4 NE1/4 Sec. 6, T8S, R41E, NW1/4 NW1/4 Sec. 5, T8S, R41E. Site 8 is a proposed rip-rap site along the extension route. Access was denied to this site. Site 8 was assessed from the adjacent county road. This site is dominated by Rocky Mountain Birch and Willows in the tree/shrub layer, and Cordgrass and Reedgrass in the grass/forb layer. Site 8 is characteristic of a Riparian Zone-R20WG (River bank) ecosystem.

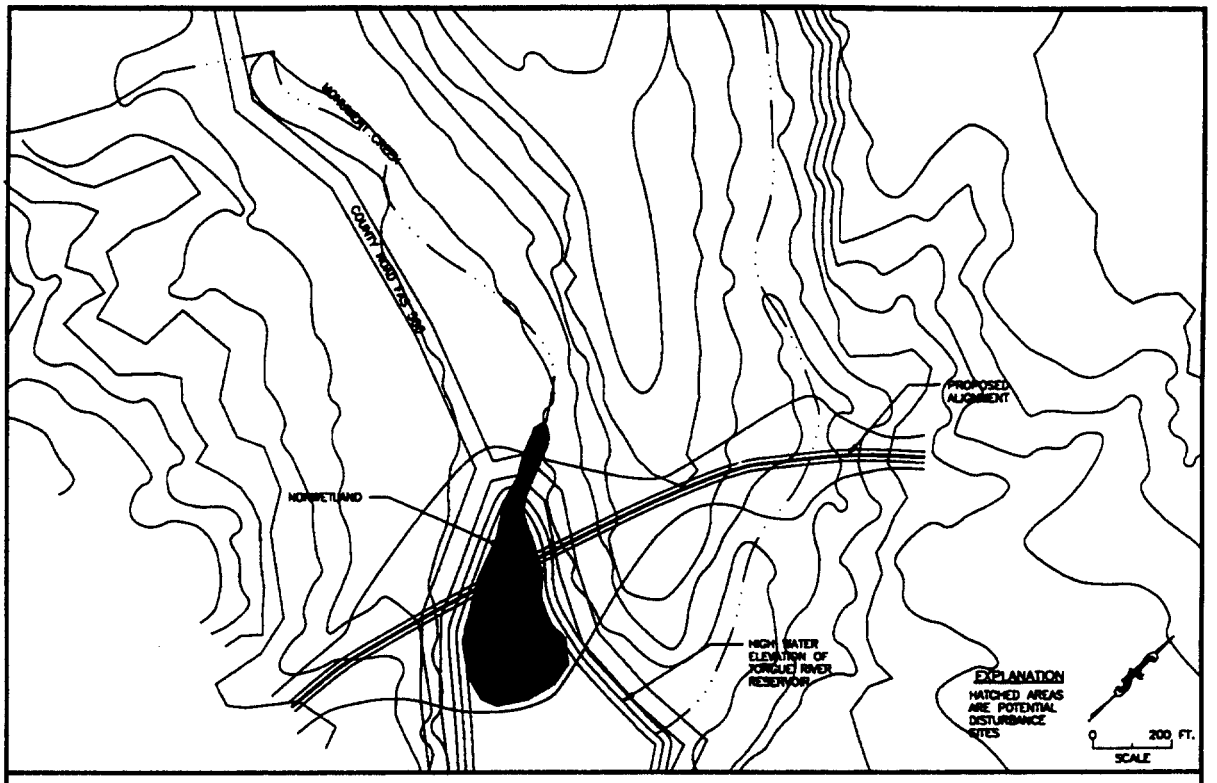
FIGURE A-8

SITE 8
PROPOSED RIP-RAP LOCATION

TONGUE RIVER RAILROAD COMPANY

Western Water Consultants, Inc.

HRA PROJECT\027\SITE8.DWG 2/8/86 BOL



Site 9 is located in the SW1/4 SE1/4 Sec. 14, T8S, R4UE. Site 9 is a proposed rip-rap area in the Monument Creek drainage. Monument Creek/Site 9 is characteristic of an Upland (upland site), ephemeral drainage. This site is dominated by Needleandthread, wheatgrasses with Big Sagebrush and Rocky Mountain Juniper.

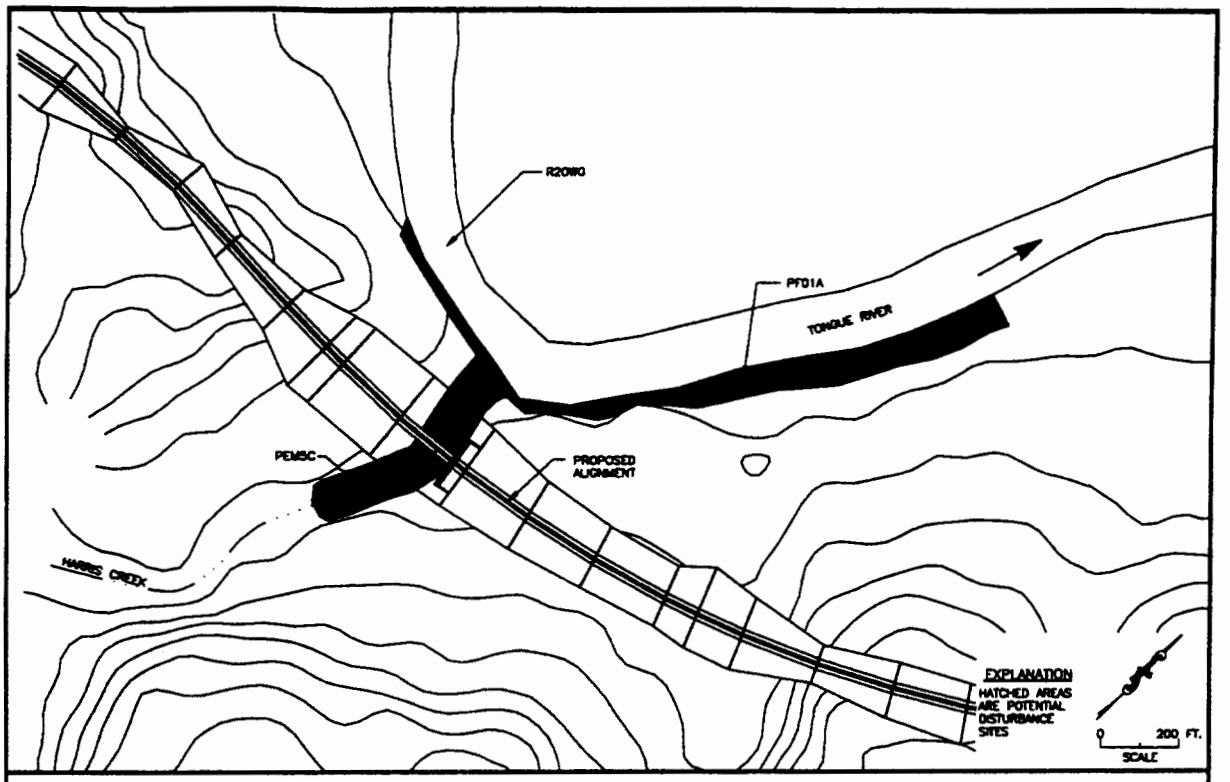
FIGURE A-9

SITE 9
MONUMENT CREEK SITE

TONGUE RIVER RAILROAD COMPANY

Western Water Consultants, Inc.

HRA PROJECT\027\SITE9.DWG 2/9/96 BDL



Site 10 is located in SW1/4 SW1/4 Sec. 23, T7S, R41E. Site 10 is at the Harris Creek junction with the Tongue River. Access to this site was denied. An area of similar topographic position and ecosystem type located 50 feet upstream within Harris Creek from the proposed railroad alignment was assessed for its wetland characteristics. Harris Creek is an ephemeral drainage that has been heavily grazed. Site 10 is dominated by Sedges, exhibits hydric soils with a strong sulfidic odor. Soils were saturated thus creating anaerobic conditions. The location assessed in Harris Creek does exhibit the necessary indicators to be a Jurisdictional Wetland–PEM5C (Palustrine – emergent, narrow leafed persistent, seasonal). It is assumed that these characteristics also exist at the location of the proposed railroad alignment. The NWI map indicated the river bank to be a Wetland–PF01A (Palustrine – forested broad leafed deciduous temporary). Site 10 is dominated by Rocky Mountain Maple in the tree/shrub layer and Sedges in the grass/forb layer.

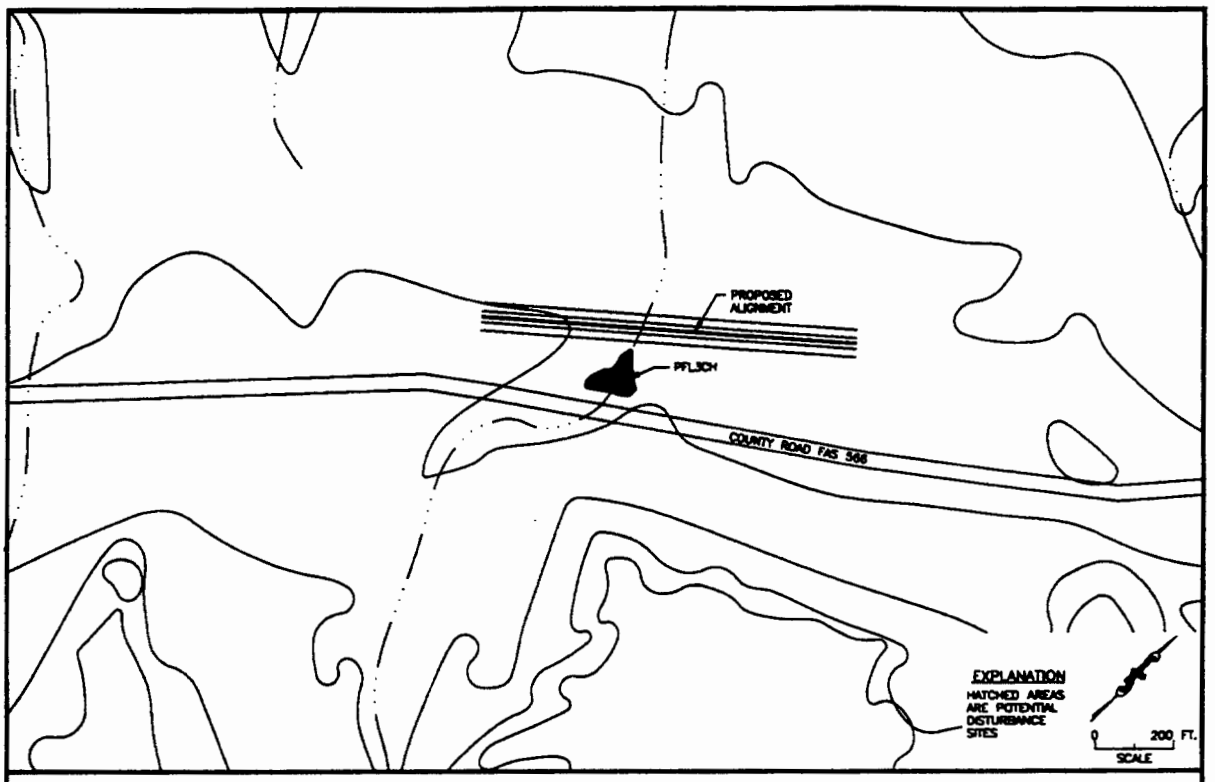
FIGURE A–10

SITE 10
HARRIS CREEK CROSSING

TONGUE RIVER RAILROAD COMPANY

Western Water Consultants, Inc.

HRA PROJECT\027\SITE10.DWG 2/8/96 BDL



Site 11 is located in NW1/4 SE1/4 Sec. 19, T5S, R43E. Site 11 is a open water pond that has developed as a result of precipitation events. Site 11 is characteristic of a Seasonally Flooded Basin or Mudflat-PFL3Ch (Palustrine – flat, mud seasonally flooded, diked). At the time of the assessment, no free standing woter was present in the pond. Site 11 is heavily utilized by cattle for watering and grazing. Soils underlying Site 11 are evident of hydric conditions with sulfidic odor and saturation.

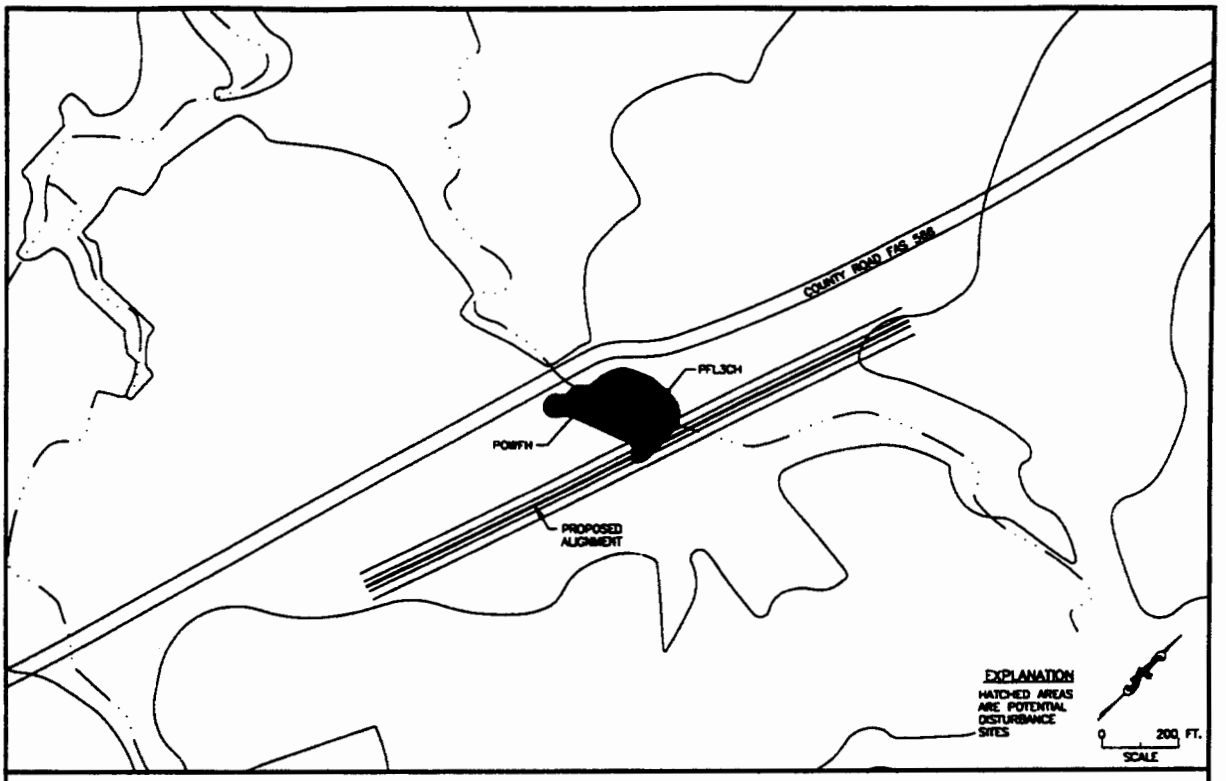
FIGURE A–11

SITE 11
STOCK POND

TONGUE RIVER RAILROAD COMPANY

Western Water Consultants, Inc.

HRA PROJECT\027\SITE11.DWG 2/9/96 BDL



Site 12 is located in NE1/4 SE1/4 Sec. 9, T5S, R43E. Site 12 is an open water pond that has developed as a result of precipitation events. Site 12 is characteristic of a Seasonally Flooded Basin or Mudflat–PFL3Ch (Palustrine – open water, semi–permanent, diked) and POWFh (Palustrine – open water, semi–permanent, diked). Site 12 exhibits signs of heavy watering by cattle and was mostly void of recognizable vegetation. Soils were saturated with a sulfidic odor and showed signs of anaerobic conditions.

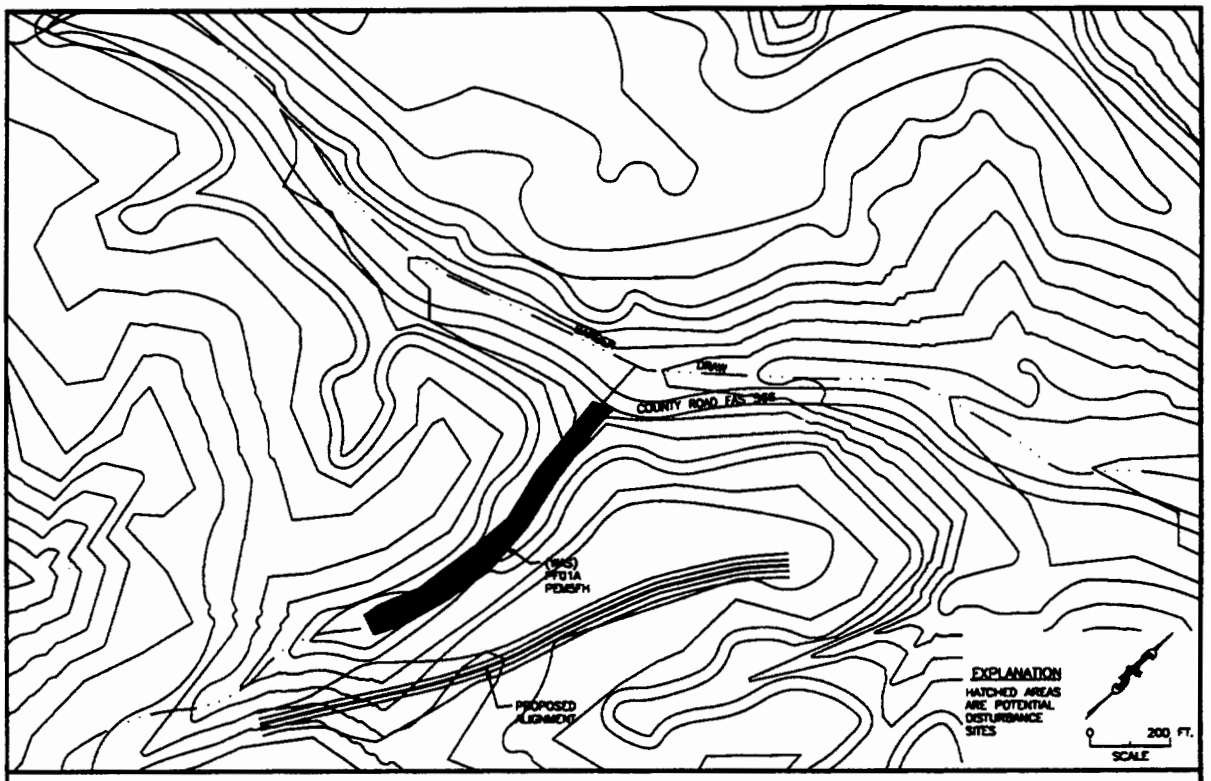
FIGURE A–12

SITE 12
STOCK POND

TONGUE RIVER RAILROAD COMPANY

Western Water Consultants, Inc.

H:\RA PROJECT\027\SITE1.DWG 2/9/98 BDL



Site 13 is at NE1/4 SW1/4 Sec. 22, T7S, R40E. Site 13 is the Barber Draw site located on the Alternative route of the proposed Tongue River extension. Site 13 ot the time of assessment has been disturbed from its natural Jurisdictional Wetland– PFO1A (Palustrine, forested, broad leafed deciduous, temporary; and PEM5Fh–Palustrine, emergent, narrow leafed persistent, semi–permanent, diked) and made into a stock watering tank and pond fed by a natural spring that is now plumbed to control the water flow. Site 13 was evaluated in accordance with the COE 1987 manual as being a problem or disturbed area.

FIGURE A–13

SITE 13
BARBER DRAW SITE

TONGUE RIVER RAILROAD COMPANY

Western Water Consultants, Inc.

HRA PROJECT\027\SITE13.DWG 2/9/98 BDL

WWC DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Site 1

Project/Site: Tongue River/Hanging Woman Creek	Date: Oct. 5, 1994
Application/Owner: Tongue River Railroad	County: Rosebud
Investigator: Gustin / Rux	State: Montana
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (A typical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse)	Plot ID:

NW¼ NW¼ S. 18 T6S, R43E

VEGETATION

Site not accessible

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Spartina pectinata		OBL	9.		
2. Salix sp.			10.		
3. Andropogon gerardii		FACU	11.		
4. Poa sp.			12.		
5. Acer glabrum		FAC	13.		
6. Rumex occidentalis		FACW+	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC).

Remarks: Heavily vegetated banks. Thick overstory of R.M. Maple/ Salix and grasses.

HYDROLOGY

X Recorded Data (Describe in Remarks):
- X Stream, Lake, or Tide Gauge
- X Aerial Photographs ≠ NWI
- __ Other

__ No Recorded Data Available

Field Observations:
- Depth of Surface Water: Approx. 10 (in.)
- Depth to Free Water in Pit: _____ (in.)
- Depth to Saturated Soil: _____ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- X Inundated
- X Saturated in Upper 12 Inches
- __ Water Marks
- __ Drift Lines
- __ Sediment Deposits
- __ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- __ Oxidized Root Channels in Upper 12 Inches
- __ Water-Stained Leaves
- __ Local Soil Survey Data
- __ FAC-Neutral Test
- __ Other (Explain in Remarks)

Remarks: 20-50 ft. wide creek. Open water, moving very slow, ponding, possibly backing up from river or diversion dam down-stream?

SOILS

Site not accessible — Site 1

Map Unit Name (Series and Phase): RIVRA

Drainage Class: _____

Taxonomy (Subgroup): Vstic Torrifluvent

Field Observations
Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, Etc.

Hydric Soil Indicators:

- ___Histosol
- ___Histic Epipedon
- ___Sulfidic Odor
- ___Aquic Moisture Regime
- ___Reducing Conditions
- ___Glayed or Low-Chroma Colors
- ___Concretions
- ___High Organic Content in Surface Layer in Sandy Soils
- ___Organic Streaking in Sandy Soils
- ___Listed on Local Hydric Soils List
- X Listed on National Hydric Soils List
- ___Other (Explain in Remarks)

Remarks: Soils mapped by SCS.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No (Circle)		(Circle)
Wetland Hydrology Present?	(Yes)	No		
Hydric Soils Present	(Yes)	No	Is this Sampling Point Within a Wetland?	Yes No

Remarks: Wet, heavily vegetated area. No grazing evident.

Approved by HQUSACE 3/92

WWC DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Site 2

Project/Site: Tongue River/Wall Creek, Site 2 Application/Owner: Tongue River Railroad Investigator: Gustin / RVx	Date: Oct 5, 1994 County: Rosebud State: Montana
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (A typical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse)	Community ID: _____ Transect ID: _____ Plot ID: _____

NW¼ NW¼ S.5, T7S, R41E

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Carex sp.			9.		
2. Juncus sp.			10.		
3. Salix sp.			11.		
4. Acer glabrum			12.		
5. Spartina pectinata		OBL	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC). _____

Remarks: Small area formed by ditch bank has created the Carex community

HYDROLOGY

X Recorded Data (Describe in Remarks):
- __ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- __ Other

__ No Recorded Data Available

Field Observations:

Depth of Surface Water:	NA	(in.)
Depth to Free Water in Pit:	NA	(in.)
Depth to Saturated Soil:	15"	(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- __ Inundated
- X Saturated in Upper 12 Inches
- __ Water Marks
- __ Drift Lines
- X Sediment Deposits
- __ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- X Oxidized Root Channels in Upper 12 Inches
- __ Water-Stained Leaves
- __ Local Soil Survey Data
- __ FAC-Neutral Test
- __ Other (Explain in Remarks)

Remarks: As river rises with flooding & diversions into adjacent irrigation ditch raises ground water table. Recipition events from Wall Creek.

SOILS

Site 2

Map Unit Name (Series and Phase): RIVRA

Drainage Class: _____

Taxonomy (Subgroup): Vstic Torrifluvent

Field Observations
Confirm Mapped Type? (Yes) No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, Etc.
0-5"	___	10yr 4/3	___	___	Clayey loam
5-15"	___	10yr 4/3	7	saturated	Reduction 20%
___	___	___	___	___	___
___	___	___	___	___	___
___	___	___	___	___	___

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- X Sulfidic Odor
- X Aquic Moisture Regime
- X Reducing Conditions
- X Glayed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- X Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- X Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: Gleying less than 5%

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No (Circle)		(Circle)
Wetland Hydrology Present?	(Yes)	No		
Hydric Soils Present	(Yes)	No	Is this Sampling Point Within a Wetland? (Yes)	No

Remarks: This area on Wall Creek bed is 15' X 50'

Approved by HQUSACE 3/92

WWC DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Site 3

Project/Site: Tongue River Site 3 Application/Owner: Tongue River Railroad Investigator: Gustin / Ruk	Date: Oct. 4, 1994 County: Rosebud State: Montana
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (A typical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse)	Community ID: _____ Transect ID: _____ Plot ID: _____

NW¼ NE¼ S. 27, T75, R41E

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Spartina pectinata	grass	OBL	9.		
2. Salix spp.	shrub		10.		
3. Typha latifolia		OBL	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are (OBL, FACW or FAC (excluding FAC). > 50%

Remarks: Heavily grazed by cattle (Salix community)

HYDROLOGY

X Recorded Data (Describe in Remarks): __Stream, Lake, or Tide Gauge X Aerial Photographs & NWI __Other __No Recorded Data Available Field Observations: Depth of Surface Water: _____(in.) Depth to Free Water in Pit: _____(in.) Depth to Saturated Soil: _____(in.)	Wetland Hydrology Indicators: Primary Indicators: __Inundated __Saturated in Upper 12 Inches __Water Marks __Drift Lines __Sediment Deposits __Drainage Patterns in Wetlands Secondary Indicators (2 or more required): __Oxidized Root Channels in Upper 12 Inches __Water-Stained Leaves __Local Soil Survey Data __FAC-Neutral Test __Other (Explain in Remarks)

Remarks: River Riparian Zone

SOILS

Site 3

Map Unit Name (Series and Phase): Rivra

Drainage Class: _____

Taxonomy (Subgroup): Vstic Torrifluvent

Field Observations
Confirm Mapped Type? (Yes) No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, Etc.
0-5	A	10yr 3/2	—		Clayey loam
5-15		10yr 3/2	2.5/5gy		Clayey silt loam
15"		10yr 3/2			Scoria

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- X Aquic Moisture Regime
- ___ Reducing Conditions
- X Glayed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- X Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No (Circle)		(Circle)
Wetland Hydrology Present?	(Yes)	No		
Hydric Soils Present	(Yes)	No	Is this Sampling Point Within a Wetland? (Yes)	No

Remarks: Adjacent to Alternative route, a smaller area then alt. at 3.

Approved by HQUSACE 3/92

WWC DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Alternative at Site 3

Project/Site: Tongue River / 4 Mile Creek Alt. Site 3 Application/Owner: Tongue River Railroad Investigator: Gustin / Rux	Date: Oct 4, 1994 County: Rosebud State: Montana
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (A typical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse)	Community ID: _____ Transect ID: _____ Plot ID: _____

NW¼ NE¼ S. 27, T7S, R41E.

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Spartina pectinata	Grass	OBL	9.		
2. Salix spp.	Treeshrub		10.		
3. Acer glabrum	Tree	FAC	11.		
4. Andropogon gerardii	Grass	FACU	12.		
5. Typha sp. latifolia		OBL	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are (OBL, FACW or FAC (excluding FAC). > 50 %

Remarks: Heavily grazed by livestock. - Salix

HYDROLOGY

X Recorded Data (Describe in Remarks):
- __ Stream, Lake, or Tide Gauge
- X Aerial Photographs NWI
- __ Other

__ No Recorded Data Available

Field Observations:
- Depth of Surface Water: 15 (in.)
- Depth to Free Water in Pit: 15 (in.)
- Depth to Saturated Soil: Surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- X Inundated
- X Saturated in Upper 12 Inches
- X Water Marks
- X Drift Lines
- X Sediment Deposits
- __ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- __ Oxidized Root Channels in Upper 12 Inches
- __ Water-Stained Leaves
- __ Local Soil Survey Data
- __ FAC-Neutral Test
- __ Other (Explain in Remarks)

Remarks: Intermittent pools of open water along bank. Lots of use by ducks, & turtles evident too.

SOILS

Alternative at Site 3

Map Unit Name (Series and Phase): RIVRA

Drainage Class: _____

Taxonomy (Subgroup): Ustic Torrifluvent

Field Observations
Confirm Mapped Type? (Yes) No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, Etc.
0-5	A	10yr 3/2	—		Clayey loam
5-15		10yr 3/2	2.5/5G4		Clayey silt loam
15"		10yr 3/2	—		Scoria layer

Hydric Soil Indicators:

- ___Histosol
- ___Histic Epipedon
- X Sulfidic Odor
- X Aquic Moisture Regime
- X Reducing Conditions
- X Glayed or Low-Chroma Colors
- ___Concretions
- ___High Organic Content in Surface Layer in Sandy Soils
- ___Organic Streaking in Sandy Soils
- ___Listed on Local Hydric Soils List
- X Listed on National Hydric Soils List
- ___Other (Explain in Remarks)

Remarks: Saturated, evidence of scoria deposition at 15"

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No (Circle)
Wetland Hydrology Present?	(Yes)	No
Hydric Soils Present	(Yes)	No

(Circle)
Is this Sampling Point Within a Wetland? (Yes) No

Remarks: Jurisdictional wetland on Alternative route R.O.W.

Approved by HQUSACE 3/92

WWC DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Site 4

Project/Site: Tongue River Site 4 Application/Owner: Tongue River Railroad Investigator: Gustin / Rux	Date: Oct 4, 1994 County: Rosebud State: Montana
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (A typical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse)	Community ID: _____ Transect ID: _____ Plot ID: _____

NW ¼ NW ¼ S. 34, T7S, R41E.

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Spartina pectinata		OBL	9.		
2. Leersia oryzoides		OBL	10.		
3. Andropogon gerardii		FACU	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are (OBL, FACW or FAC (excluding FAC). > 50%

Remarks: Narrow band vegetation on bank, east. Opposite side, west has bench on river, probably wetland river riparian.

HYDROLOGY

X Recorded Data (Describe in Remarks): X Stream, Lake, or Tide Gauge X Aerial Photographs ≠ NWI __ Other __ No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: __ Inundated __ Saturated in Upper 12 Inches __ Water Marks __ Drift Lines __ Sediment Deposits __ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): __ Oxidized Root Channels in Upper 12 Inches __ Water-Stained Leaves __ Local Soil Survey Data __ FAC-Neutral Test __ Other (Explain in Remarks)
Field Observations: Depth of Surface Water: _____(in.) Depth to Free Water in Pit: _____(in.) Depth to Saturated Soil: _____(in.)	

Remarks: River Riparian zone.

WWC DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Site 5

Project/Site: Tongue River Site 5	Date: Oct. 4, 1994
Application/Owner: Tongue River Railroad	County: Rosebud
Investigator: Gustin / Rux	State: Montana

Do Normal Circumstances exist on the site?	(Yes)	No	Community ID:
Is the site significantly disturbed (A typical Situation)?	Yes	(No)	Transect ID:
Is the area a potential Problem Area?	Yes	(No)	Plot ID:
(If needed, explain on reverse)			

C. S. 33, T 7S, R41E.

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Spartina pectinata	Grass	OBL	9.		
2. Andropogon gerardii	"	FACU	10.		
3. Aster junciformis	Forb	OBL	11.		
4. Equisetum sylvaticum		FACW	12.		
5. Leersia oryzoides		OBL	13.		
6. Rosa woodsii		FACU	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are (OBL, FACW or FAC (excluding FAC). >50%

Remarks: Moderate grazing by livestock. Island in river, upstream of site covered with Spartina / Salix.

HYDROLOGY

X Recorded Data (Describe in Remarks):
- X Stream, Lake, or Tide Gauge
- X Aerial Photographs & NWI
- __ Other

__ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____ (in.)

Depth to Free Water in Pit: _____ (in.)

Depth to Saturated Soil: 20 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- __ Inundated
- __ Saturated in Upper 12 Inches
- __ Water Marks
- __ Drift Lines
- __ Sediment Deposits
- __ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- __ Oxidized Root Channels in Upper 12 Inches
- __ Water-Stained Leaves
- __ Local Soil Survey Data
- __ FAC-Neutral Test
- __ Other (Explain in Remarks)

Remarks: River Riparian Zone

SOILS

Site not accessible — Site 6

Map Unit Name (Series and Phase): Haverson

Drainage Class: _____

Field Observations

Taxonomy (Subgroup): Ustic Torrifluvent

Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, Etc.

Hydric Soil Indicators:

___Histosol
___Histic Epipedon
___Sulfidic Odor
___Aquic Moisture Regime
___Reducing Conditions
___Gleyed or Low-Chroma Colors
___Concretions
___High Organic Content in Surface Layer in Sandy Soils
___Organic Streaking in Sandy Soils
___Listed on Local Hydric Soils List
___Listed on National Hydric Soils List
___Other (Explain in Remarks)

Remarks: No access to site.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)		(Circle)
Wetland Hydrology Present?	Yes	No		
Hydric Soils Present	Yes	No	Is this Sampling Point Within a Wetland? Yes	No

Remarks: Narrow river bank riparian zones present on both sides of river.

Approved by HQUSACE 3/92

WWC DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Site 7

Project/Site: Tongue River Site 7	Date: Oct 4, 1994
Application/Owner: Tongue River Railroad	County: Bighorn
Investigator: Gustin / Rux	State: Montana
Do Normal Circumstances exist on the site? (Yes) No	Community ID:
Is the site significantly disturbed (A typical Situation)? Yes (No)	Transect ID:
Is the area a potential Problem Area? Yes (No)	Plot ID:
(If needed, explain on reverse)	

SW ¼ NE ¼ S. 32, T 7½S, R 41E

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Spartina pectinata	Grass	OBL	9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are (OBL, FACW or FAC (excluding FAC). >50%

Remarks: Unable to access this site
Narrow bank.

HYDROLOGY

X Recorded Data (Describe in Remarks):
- __Stream, Lake, or Tide Gauge
- X Aerial Photographs # NNI.
- __Other

__No Recorded Data Available

Field Observations:
- Depth of Surface Water: _____(in.)
- Depth to Free Water in Pit: _____(in.)
- Depth to Saturated Soil: _____(in.)

Wetland Hydrology Indicators:
Primary Indicators:
- __Inundated
- __Saturated in Upper 12 Inches
- __Water Marks
- __Drift Lines
- __Sediment Deposits
- __Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- __Oxidized Root Channels in Upper 12 Inches
- __Water-Stained Leaves
- __Local Soil Survey Data
- __FAC-Neutral Test
- __Other (Explain in Remarks)

Remarks: River Riparian Zone

SOILS

Site not accessible

Map Unit Name (Series and Phase): N/A (Probably Haueagu)

Drainage Class: _____

Taxonomy (Subgroup): Vstic Torrifluvent

Field Observations
Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, Etc.
___	___	_____	_____	_____	_____
___	___	_____	_____	_____	_____
___	___	_____	_____	_____	_____
___	___	_____	_____	_____	_____
___	___	_____	_____	_____	_____

Hydric Soil Indicators:

___Histosol
___Histic Epipedon
___Sulfidic Odor
___Aquic Moisture Regime
___Reducing Conditions
___Glayed or Low-Chroma Colors
___Concretions
___High Organic Content in Surface Layer in Sandy Soils
___Organic Streaking in Sandy Soils
___Listed on Local Hydric Soils List
___Listed on National Hydric Soils List
___Other (Explain in Remarks)

Remarks: No Access.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)		(Circle)
Wetland Hydrology Present?	Yes	No		
Hydric Soils Present	Yes	No	Is this Sampling Point Within a Wetland? Yes	No

Remarks: Narrow river bank riparian zones

Approved by HQUSACE 3/92

SOILS Site not accessible Site 8

Map Unit Name
(Series and Phase): Glenberg

Drainage C[redacted]

Field Observations

Taxonomy (Subgroup): Ustic Torrifluvent

Confirm Mapped Type? Yes (No)

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, Etc.

Hydric Soil Indicators:

___Histosol
___Histic Epipedon
___Sulfidic Odor
___Aquic Moisture Regime
___Reducing Conditions
___Glayed or Low-Chroma Colors
___Concretions
___High Organic Content in Surface Layer in Sandy Soils
___Organic Streaking in Sandy Soils
___Listed on Local Hydric Soils List
___Listed on National Hydric Soils List
___Other (Explain in Remarks)

Remarks: No access granted to site.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	No (Circle)		(Circle)
Wetland Hydrology Present?	Yes	No		
Hydric Soils Present	Yes	No	Is this Sampling Point Within a Wetland? Yes	No

Remarks:

Approved by HQUSACE 3/92

WWC DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Site 9.

Project/Site: Monument Creek Site 9 Application/Owner: Tongue River Railroad Investigator: Gustin / Rust	Date: Oct 4, 1994 County: Rosebud State: Montana
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (A typical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse)	Community ID: _____ Transect ID: _____ Plot ID: _____

SW¼ SE¼ S. 14 T8S. R40E.

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Western wheat grass			9.		
2. Needle and thread			10.		
3. Prarie junegrass			11.		
4. Big Sagebrush			12.		
5. Rocky Mountain Juniper			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC). _____

Remarks: Nonwetland, upland site

HYDROLOGY

__Recorded Data (Describe in Remarks):
- __Stream, Lake, or Tide Gauge
- __Aerial Photographs
- __Other

__No Recorded Data Available

Field Observations:

Depth of Surface Water: _____(in.)

Depth to Free Water in Pit: _____(in.)

Depth to Saturated Soil: _____(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- __Inundated
- __Saturated in Upper 12 Inches
- __Water Marks
- __Drift Lines
- __Sediment Deposits
- __Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- __Oxidized Root Channels in Upper 12 Inches
- __Water-Stained Leaves
- __Local Soil Survey Data
- __FAC-Neutral Test
- __Other (Explain in Remarks)

Remarks: Nonwetland. Doesn't appear reservoir has ever gotten this high, no influence from reservoir.

SOILS

Site 9

Map Unit Name
(Series and Phase): Chugter

Drainage Class: [redacted]

Field Observations
Confirm Mapped Type? Yes (No)

Taxonomy (Subgroup): Aridic Haplustolls

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, Etc.

Hydric Soil Indicators:

___Histosol
___Histic Epipedon
___Sulfidic Odor
___Aquic Moisture Regime
___Reducing Conditions
___Glayed or Low-Chroma Colors
___Concretions
___High Organic Content in Surface Layer in Sandy Soils
___Organic Streaking in Sandy Soils
___Listed on Local Hydric Soils List
___Listed on National Hydric Soils List
___Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	(No) (Circle)	(Circle)
Wetland Hydrology Present?	Yes	(No)	
Hydric Soils Present	Yes	(No)	Is this Sampling Point Within a Wetland? Yes No

Remarks:

Upland Site.

Approved by HQUSACE 3/92

WWC DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Site 10

Project/Site: Harris Creek site 10	Date: Oct. 4, 1994
Application/Owner: Tongue River Railroad	County: Bighorn
Investigator: Gustin / Rux	State: Montana

Do Normal Circumstances exist on the site?	(Yes)	No	Community ID:
Is the site significantly disturbed (A typical Situation)?	Yes	(No)	Transect ID:
Is the area a potential Problem Area?	Yes	(No)	Plot ID:
(If needed, explain on reverse)			

SW¼ SW¼ S.23, T7S, R41E.

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Juncus sp.		FACW	9.		
2. Carex sp.			10.		
3. Salix sp.			11.		
4. Acer glabrum		FAC	12.		
5. Rumex occidentalis		FAC	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are (OBL) FACW or FAC (excluding FAC). >50%

Remarks: Sedges spp. dominate > 99%
Heavily grazed by livestock.

HYDROLOGY

X Recorded Data (Describe in Remarks):
- __Stream, Lake, or Tide Gauge
- X Aerial Photographs
- __Other

__No Recorded Data Available

Field Observations:

Depth of Surface Water:	N/A (in.)
Depth to Free Water in Pit:	10 (in.)
Depth to Saturated Soil:	surface (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ✓ Inundated
- ✓ Saturated in Upper 12 Inches
- ✓ Water Marks
- ✓ Drift Lines
- __Sediment Deposits
- __Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- __Oxidized Root Channels in Upper 12 Inches
- __Water-Stained Leaves
- __Local Soil Survey Data
- __FAC-Neutral Test
- __Other (Explain in Remarks)

Remarks: One location in Harris Creek was depressed and had standing water.

SOILS

Site 10

Map Unit Name (Series and Phase): RIVRA

Drainage Class: _____

Taxonomy (Subgroup): Ustic Torrifluvent

Field Observations Confirm Mapped Type? (Yes) No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, Etc.
0-5	A	10yr 3/2			Clayey loam
5-R	B	Black	2.5yr 5/6	Yellow	silt

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ✓ Sulfidic Odor
- ✓ Aquic Moisture Regime
- ✓ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ✓ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: Saturated, free HOH in pit at 10"
Mapped by SCS.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No (Circle)		(Circle)
Wetland Hydrology Present?	(Yes)	No		
Hydric Soils Present	(Yes)	No	Is this Sampling Point Within a Wetland?	(Yes) No

Remarks: This site occurs in the channel bottom of Harris creek, spring fed and does class as a wetland. It is assumed this site continues to river, a short distance, no access granted by landower.

Approved by HQUSACE 3/92

WWC DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Site 11

Project/Site: Stock Pond Site # 11 Application/Owner: Tongue River Railroad Investigator: Gustin / Rust	Date: Oct. 5, 1994 County: _____ State: _____
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (A typical Situation)? * Yes (No) Is the area a potential Problem Area? * (Yes) No (If needed, explain on reverse) * Heavy Grazing/lunking by cattle	Community ID: _____ Transect ID: _____ Plot ID: _____

NW ¼ SE ¼ S. 19, T55, R43E.

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Juncus balticus	___	OBL	9.	___	___
2.	___	___	10.	___	___
3.	___	___	11.	___	___
4.	___	___	12.	___	___
5.	___	___	13.	___	___
6.	___	___	14.	___	___
7.	___	___	15.	___	___
8.	___	___	16.	___	___

Percent of Dominant Species that are (OBL) FACW or FAC (excluding FAC). >50%

Remarks: Heavy grazing by livestock has left little vegetation.

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:
- Depth of Surface Water: 0 (in.)
- Depth to Free Water in Pit: _____ (in.)
- Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- X Inundated
- X Saturated in Upper 12 Inches
- X Water Marks
- X Drift Lines
- X Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Open water shown on aerial photo and the NWI map.

SOILS

Site 11

Map Unit Name (Series and Phase): YAMAC

Drainage Class: _____

Taxonomy (Subgroup): N/A

Field Observations Confirm Mapped Type? (Yes) No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, Etc.
0-10	___	5yr 7/3	—	—	Clayey loam
10-20	___	2.5yr 4/2	2.5y 2.5/1	50%	Reduction @ 30%
___	___	___	___	___	___
___	___	___	___	___	___
___	___	___	___	___	___

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ✓ Sulfidic Odor
- ___ Aquic Moisture Regime
- X Reducing Conditions
- ___ Glayed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: Stock pond during dry season, soil show mottling starting 10" at >50%, reducing conditions present, saturated, slight sulfidic odor.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No (Circle)	(Circle)	
Wetland Hydrology Present?	(Yes)	No		
Hydric Soils Present	(Yes)	No	Is this Sampling Point Within a Wetland? (Yes)	No

Remarks:

Approved by HQUSACE 3/92

WWC DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: Stock Pond Site #12 Application/Owner: Tongue River Railroad Investigator: Gustin / Ruz	Date: Oct. 5, 1994 County: Rosebud State: Montana
Do Normal Circumstances exist on the site? (Yes) No Is the site significantly disturbed (A typical Situation)? Yes (No) Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse) Heavy Grazing activity	Community ID: _____ Transect ID: _____ Plot ID: _____

NE ¼ SE ¼ S. 19, T5S, R43E

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Juncus balticus	___	OBL	9.	___	___
2.	___	___	10.	___	___
3.	___	___	11.	___	___
4.	___	___	12.	___	___
5.	___	___	13.	___	___
6.	___	___	14.	___	___
7.	___	___	15.	___	___
8.	___	___	16.	___	___

Percent of Dominant Species that are (OBL,) FACW or FAC (excluding FAC). >50 %

Remarks: Heavy grazing has left little or no vegetation.

HYDROLOGY

X Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- X Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 0-12 (in.)

Depth to Free Water in Pit: _____ (in.)

Depth to Saturated Soil: 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- X Inundated
- X Saturated in Upper 12 Inches
- X Water Marks
- X Drift Lines
- X Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Stock pond with open water

SOILS

Site 12

Map Unit Name (Series and Phase): YAMAC

Drainage Class: _____

Taxonomy (Subgroup): N/A

Field Observations Confirm Mapped Type? (Yes) No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, Etc.
0-20		2.5yr 4/2	2.5/1 gy	50%	Clayey loam

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- X Sulfidic Odor Slight
- X Aquic Moisture Regime
- X Reducing Conditions
- ___ Glayed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: Overflow site, accumulates alot of silt.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes)	No (Circle)		(Circle)
Wetland Hydrology Present?	(Yes)	No		
Hydric Soils Present	(Yes)	No	Is this Sampling Point Within a Wetland? (Yes)	No

Remarks:

Approved by HQUSACE 3/92

Job No. # 90043 S

Sample Point # 13
Transect # _____

WWC WETLANDS DATA FORM 3
ATYPICAL SITUATIONS

Applicant/Owner: Tongue River Railroad Date: Oct. 6, 1994
Project/Site: Barber Draw State: Montana County: Bighorn
Location: NE 1/4 SW 1/4, Sec: 23, T. 7 S. R. 40 E. G.P.S.: LAT: _____ LONG: _____
Field Investigator(s): Gustin / Rux

A. VEGETATION:

1. Type of Alteration: All vegetation was scraped off floor of small draw for approximately 500 feet for spring development.

2. Effect on Vegetation: As of field date, there was no vegetation present in the disturbed area.

3. Previous Vegetation: (Attach documentation) Scirpus / Juncus community. Alteration took place very recently so plants are still green.

4. Hydrophytic Vegetation? Yes ✓ No _____

B. SOILS:

1. Type of Alteration: Bottom of draw was excavated to install a water line from spring discharge to a stock tank. All soil profiles / horizons mixed / disturbed.

2. Effect on Soils: Soils aerated and dessicated.

3. Previous Soils: (Attach documentation) Clumps and pieces of histic soils mixed with root masses. Soils were saturated.

4. Hydric Soils? Yes ✓ No _____

C. HYDROLOGY:

1. Type of Alteration: Spring fed draw altered to provide water for stock tank. All discharge enters pipeline to tank and overflows into an impoundment / dike.

2. Effect on Hydrology: The majority of the area at the bottom of the draw is dry except in the bottom of the impoundment.

3. Previous Hydrology: (Attach documentation) _____

4. Wetland Hydrology? Yes ✓ No _____

Characterized By: Scott Gustin

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
215 NORTH 17TH STREET
OMAHA, NEBRASKA 68102-4978

December 16, 1994

REPLY TO
ATTENTION OF
Planning Division

Mr. Milan Auger, Director
Office of Economic and Environmental Analysis
Interstate Commerce Commission
Room 3214
Washington, D.C. 20423

Dear Mr. Auger:

We have reviewed the wetlands report, regarding the Tongue River Railroad Company's Draft Supplement to the Environmental Impact Statement, passed out to our personnel at our November 15, 1994, meeting here in Omaha. The following comments are offered on the aquatic and wetland issues discussed at the meeting:

> The wetland delineation report and mapping is adequate in its description of waters regulated under Section 404. Impacts reflect the direct footprint of fill and not potential indirect impacts. The methodology and results are adequate for processing of a Section 404 permit. Activity would likely fall under Pre-Discharge Notification (PDN) processing, which requires a Section 404 application (and approval) prior to discharge being placed in wetlands or water in conjunction with railroad construction.

With respect to the Environmental Impact Statement (EIS) process, the following comments are provided:

a. Upon final alignment, acreage figures may have to be re-evaluated. It is not anticipated that acreage will vary significantly.

b. Potential indirect impacts need to be discussed in the EIS.

c. Measures for avoidance, minimization, and compensatory mitigation (if required) should be addressed in an increasingly detailed level, commensurate with the National Environmental Policy Act (NEPA) process. The application representatives have indicated evaluating construction of stock ponds for mitigation. Inclusion of this and/or other mitigation strategies in the EIS is necessary.

d. The applicant's preferred alternative is reasonable, given safety factors. Wetlands are not a significant issue.

e. In accordance with NEPA, the information on alternatives, descriptions of affected environment and environmental consequences, and mitigative measures that is contained within the wetland document should be included in the EIS.

We understand that the final document will not contain a Section 404(b)(1) analysis; however, this analysis will be needed in conjunction with the Section 404 permit application (for both the extension and the original proposal which has expired), when the Tongue River Railroad Company chooses to apply. The Corps will need adequate time to review the application and Section 404(b)(1) analysis (approximately 6 months) prior to issuance of a permit.

Sincerely,

Robert S. Nebel

Robert S. Nebel
Chief, Environmental
Analysis Branch
Planning Division

F.D. 30186 (SUB NO. 2)

TONGUE RIVER RAILROAD COMPANY'S PROPOSED EXTENSION BETWEEN ASHLAND AND DECKER, MT

FINAL ENVIRONMENTAL IMPACT STATEMENT

APPENDIX E

RAILROAD-CAUSED FIRES REPORT

RAILROAD CAUSED FIRES - ISSUES AND DISCUSSION

1. Introduction

Where there is increased human activity, there is an increase in fire occurrence and the Tongue River Railroad Company's (TRRC's) proposed extension between Ashland and Decker, Montana may increase fire risks to the area. However, the increased fire danger is difficult to quantify. Following is a discussion of the different fire issues the Section of Environmental Analysis (SEA) considered and attempted to evaluate in response to many concerns raised in public comments.

SEA concludes that the full ramifications of the proposed construction on the environment are not clear. We are not able to predict the many variables involved with fire issues and in particular, the unique environmental facts surrounding this construction.

2. What are causes of railroad fires?

It appears that there are two main causes of railroad embankment fires. First, locomotives running at near full throttle can release carbon sparks in the exhaust gas which can start fires. A locomotive engine after standing and idling can experience a carbon build-up on pistons in the engine. At full engine capacity, carbon can break loose and be emitted. This possibility would most likely be a concern on the southbound trip from Miles City to Decker which is essentially all upgrade.

Second, loaded trains running on the downhill grade would probably use dynamic braking. However, as backup, using train brakes can cause sparks and hot metal sluff, particularly if brakes are not properly maintained.[1] This would most likely be of concern on the northbound trip from Decker to Miles City which is essentially downgrade.

3. Montana Statutory Language

Montana law requires railroads to control fire hazards along their right-of-way.[2] Railroads are to keep track and the right-of-way on either side for a distance of 100 feet, free from dead grass, weeds or any dangerous or combustible material. Also, between April 15 and July 1 each year, railroads must plow a continuous strip of not less than 6 feet in width on each side of the track as a fire guard. There can be exceptions, particularly

---

[1]Montana State Legislative Board Brotherhood of Locomotive Engineers, October 20, 1992. See pages 2, 3, and 4.

[2]Montana Law, Public Utilities and Carriers, 69-14-721, Control of fire hazards along right-of-way, and 69-14-722, Maintenance of fireguards.

when track goes through urban areas. These requirements are not always strictly maintained according to the Montana Department of State Lands.[3]

4. Existing Fire Fighting Capability

Fire protection for private and state-owned lands in Rosebud and Big Horn Counties is provided through the State/County cooperative fire control program which both counties have joined. The county provides volunteer fire fighters and Montana provides training, assistance in planning, technical advice, and purchases equipment for use by counties in fire protection efforts. The state also assists, when requested, on large fires.

Protection of Federal lands is the responsibility of Federal fire officials. There is an Interagency Fire Center located in Boise, Idaho which keeps fire statistics for all Federal government lands and coordinates fire prevention efforts. Miles City, Montana is a District fire office that includes many counties in eastern Montana, including Rosebud and Big Horn counties. During the summer fire season, an area office of the U.S. Bureau of Land Management, in Billings, Montana, operates as a dispatch center and coordinates fire control activities with the Montana Department of State Lands. The Federal fire fighting coordinators and the state and local fire fighting coordinators are in frequent communication.[4] In addition to full time staff, there are a considerable number of seasonal fire fighters trained, hired, and funded by Federal dollars, for the summer fire season.

Private fire protection available in Rosebud and Big Horn Counties is described in current county fire plans developed jointly with the Department of State Lands. These plans include information on the organization and location of fire departments, training, prevention and detection efforts, communications and reporting, presuppression and suppression efforts, funding, assessment of fire hazards, risks and values at risk, fire history, weather patterns and projections of future fire protection needs.

One point to keep in mind concerning fire fighting capability in this area is that initial attacks are the

---

[3]Letter dated October 20, 1992 from Gregory Hallsten, Montana Department of State Lands, to Dana White forwarding information about railroad caused fires.

[4]Federal lands include: three U. S. Department of Interior agencies including the Bureau of Land Management, Bureau of Indian Affairs, and the National Park Service; and one Department of Agriculture agency, the National Forest Service.

responsibility of local volunteer organizations. When a fire is reported, it takes time to contact fire fighters, organize a team, and prepare a strategy for suppressing the fire. Get-away times or response times are important in controlling the spread of fires and fire damage.

Equipment located in the Decker area of Big Horn Country includes one each of the following: 4x4 500 gallon tanker, patrol, D7, Backhoe, 200 gallon slip on (state). The area north of the reservoir for 10 miles is the most remote and inaccessible along the river. Decker is the location responsible for protecting this stretch of the river.

5. Statistics on Railroad Caused Fires

The Fire Marshal Bureau of the Montana Department of Justice collects data from each of the six regional offices of the Montana Department of State Lands regarding fires.[5] On a statewide basis, 1991 data show 175 incidents of railroad embankment fires based on area of fire origin. The total number of incidents reported in Montana in 1991 was 4,931. Railroad embankment fires represent 3.5 percent of total fires reported. In a further breakdown from the Fire Marshal Bureau, Big Horn County reported one railroad fire incident in 1991 and Rosebud County reported 4 incidents.

For Federal lands, the Interagency Fire Center collects fire data and prepares an annual wildland fire report. Data from 1991 show Montana experienced a total of 484 fires and 38,820 acres burned. The report shows railroads as one of nine causes, accounting for 18 fires and 135 acres burned. Lightening caused the largest number of fires accounting for 144 fires and 20,598 acres burned. No category was lower than railroads although one, camp fires, also had 18 fires. Railroad caused damage to 135 acres represented less than 1 percent of acres burned (.35%), and 3.7% of the total number of fires.

TRRC submitted fire data from the Department of State Lands as part of its response to the Draft Environmental Impact Statement in this proceeding. Data on Wildfires by Major Fire Category, Percent, 1981 to 1991 show that railroads were responsible for 5.4 percent of all fires over this 10 year period. Other Montana Department of State Lands data entitled Person Caused Wildfires by Major Fire Category (by acreage), 1981 to 1991 show railroad caused fires by year vary considerably as a percentage of total acres burned. Over the 10 years, data show railroad caused fires represented less than 1 percent of acres burned. However, in the worst year, 1987, the railroad category

---

[5]The report is computer based and referred to as Tally-Report 22. Data received were for 1991.

represented about 26 percent of the acres burned. While this was an aberration, it demonstrates the unpredictable/erratic nature of fires and the difficulty in finding a meaningful way to use fire statistics.

Rosebud County reports that it averages about 100 to 150 wildland fires annually and 10 to 15 structure fires. The county states, "Similar to adjacent counties, lightning is the primary cause of fire. Railroad right-of-way fires lead the list of man-caused fires followed by vehicles."[1]

In the 1989 Big Horn County fire action plan it states "In the period from 1970-1977, Big Horn County had an average of 9 man-caused fires per year. The average size of man-caused fires in this period was 14 acres.

Finally, local fire officials acknowledge that many small fires are never reported because they are extinguished by local farmers or landowners. Since local observation is the first line of detection, and these rural areas use volunteers, it is reasonable to expect that minor incidents are not reported due to the paperwork burden. It is not clear how these kinds of fires, if reported, would alter official statistics.

6. Unique Aspects of TRRC's Proposed Extension

a. Fuelbed Characteristics

No evidence was submitted analyzing or defining the fuelbed characteristics along TRRC's proposed right-of-way, or measuring the rates of spread. Rate of spread will be influenced by the fire intensity. Fire intensity is influenced by the kinds of growth available to burn, referred to in environmental discussions as fuels. Smaller diameter fuels (0-1/4 - inch, 1/4-1 - inch, 1-3 - inch), probably grasses, crops and small trees, change rapidly with daily changes in temperature and humidity. Larger diameter fuels (3-9 - inch, 9-20 - inch), probably older forest, tend to be more stable in regards to fuel moisture.

In Rosebud Country, the fire hazards and risks have been evaluated and described in the fire protection plan. There are four categories used: Rangeland, Cropland, Coniferous Forest, and River Bottoms. Cropland is high risk, Rangeland and Coniferous Forest are medium risk, and River Bottom is low risk. Below are portions of the Rosebud Country fire plan that support these rankings.

---

[1]Rosebud County Rural and Wildland Fire Protection Plan originally prepared in October, 1984 and updated September 1991. It was prepared in cooperation with the Forestry Division of the Montana Department of States Lands.

Rangeland fuels are predominately grass and sagebrush. These light fuels are very responsive to changes in moisture and temperature. Depending on seasonal conditions, this fuel type may be a fire hazard most of the year. The nature of these fuels offers the potential for large, fast moving fires, especially in high winds.

Dry crops, pasture and hayland can be severe fire hazard areas for a limited time. Fires in cured wheat, for example, can be nearly uncontrollable due to rapid spread and intense heat.

The fire hazard (Coniferous Forest) depends on the seasonal condition, but under severe conditions the forested areas present a major hazard. Fires in this type are frequently intense, but are slower moving than prairie fires. Fire control is typically more difficult due to heavier fuels and rough terrain.

(River Bottom) Fires do not normally spread rapidly or exhibit erratic behavior; however suppression can be difficult at times due to dense brush and limited access.[7]

The southern third of Rosebud county is characterized by rough, timbered grassland. The Big Horn Country fire action plan did not contain this information.[8]

b. Weather Patterns

Rosebud County has a continental climate, with cold and relatively dry winters and warm summers. The average annual precipitation is 12.4 inches. Over 75 percent falls during the period of April through September. The number of frost-free days in the growing season varies from 90 to 135, largely depending on elevation. The fire season for wildlands in Montana roughly parallels the summer season.

Climate effects fuels. During extensive periods of dry weather, fuel moisture can reach critical levels in terms of wildland fire risk. Also, at harvest time, some crops are dry

---

[7]Rosebud Country's 1984 Rural and Wildland Fire Protection Plan. Updated September 1991. See page 5.

[8]For Rosebud Country, we have received and reviewed three related documents. the Rural and Wildland Fire Protection Plan, their Fire Action Plan and their Wildland Fire Management Plan. For Big Horn County, we have located only one document, their Fire Action Plan.

fuels that present a severe fire risk.

c. Topography

The Tongue River valley topography offers unique challenges for fire fighting. Unlike the original 89-mile segment of TRRC's proposed line between Ashland and Miles City, and the existing Burlington Northern line which is now used to haul coal from Decker, TRRC's proposed 42-mile Extension passes through the Tongue River Valley which has unique topography. The terrain is much more mountainous. The valley is bordered by hills that rise 200 to 500 feet above the valley bottom. The river valley contour is narrow and winding. The river cuts through a twisting valley and canyon. The valley narrows considerably in the canyon section, to such an extent that TRRC proposes only a 75-foot right-of-way rather than the 100 foot required by Montana law.' The canyon, which forms the 10-mile stretch of valley north of the Tongue River Reservoir, in particular demonstrates these characteristics.

SEA assembled and studied the U.S. Geological Survey maps of this area which included maps of Miles City, MT; Hardin, MT; Forsyth, MT; and Sheridan, WY. The map contours represent 100 to 200 feet. They provide information about the entire area including the BN's existing railroad line and the entire stretch of the Tongue River from Miles City to Decker. By looking at the entire area, and making comparisons, the contrast and uniqueness of the terrain surrounding TRRC's proposed Extension become obvious.

It appears that because of the uniqueness of the topography of this area, existing statistics on railroad caused fires in Montana might under-represent the fire risk to this area. The narrow winding valley reduces access of emergency fire vehicles to combat railroad embankment fires. Concerns expressed in comments in this proceeding regarding the topography of the upper Tongue River valley and the isolated nature of many areas as they relate to fires, are valid.

7. Description of TRRC's Planned Mitigation

TRRC has recognized that any fire could be disastrous for the individual landowner. TRRC has agreed to develop a fire prevention and suppression plan in accordance with the Railroad

---

'Brotherhood of Locomotive Engineers Comments filed on October 20, 1992, p.2.

Fire Prevention Field Guide.[10] The prevention part of the plan would include the adequate maintenance of rolling stock and locomotive power. TRRC claims that because "...equipment used on the railroad would be new, as would the trackage used to construct the project..." the prevention part of the fire plan would be enhanced.

Comments of the Brotherhood of Locomotive Engineers (BLE) challenge the claim that maintenance status of rail cars and locomotives traveling over TRRC's line will be within its direct control.[11] BLE claims that TRRC will be operating foreign cars and locomotives.

The suppression aspect of the plan would include identification of access points along the alignment and the location of grade crossings and gates at key locations. The plan also would include an evaluation of existing fire suppression equipment in the area, along with the expected response times. TRRC stated that it may also negotiate placement of fire suppression equipment at strategic area ranches.

---

[10]The document was prepared jointly by the California Department of Forestry, the U.S. Forest Service, and the Bureau of Land Management in 1987.

[11]See October 20, 1992 comments, page 3.

F.D. 30186 (SUB NO. 2)

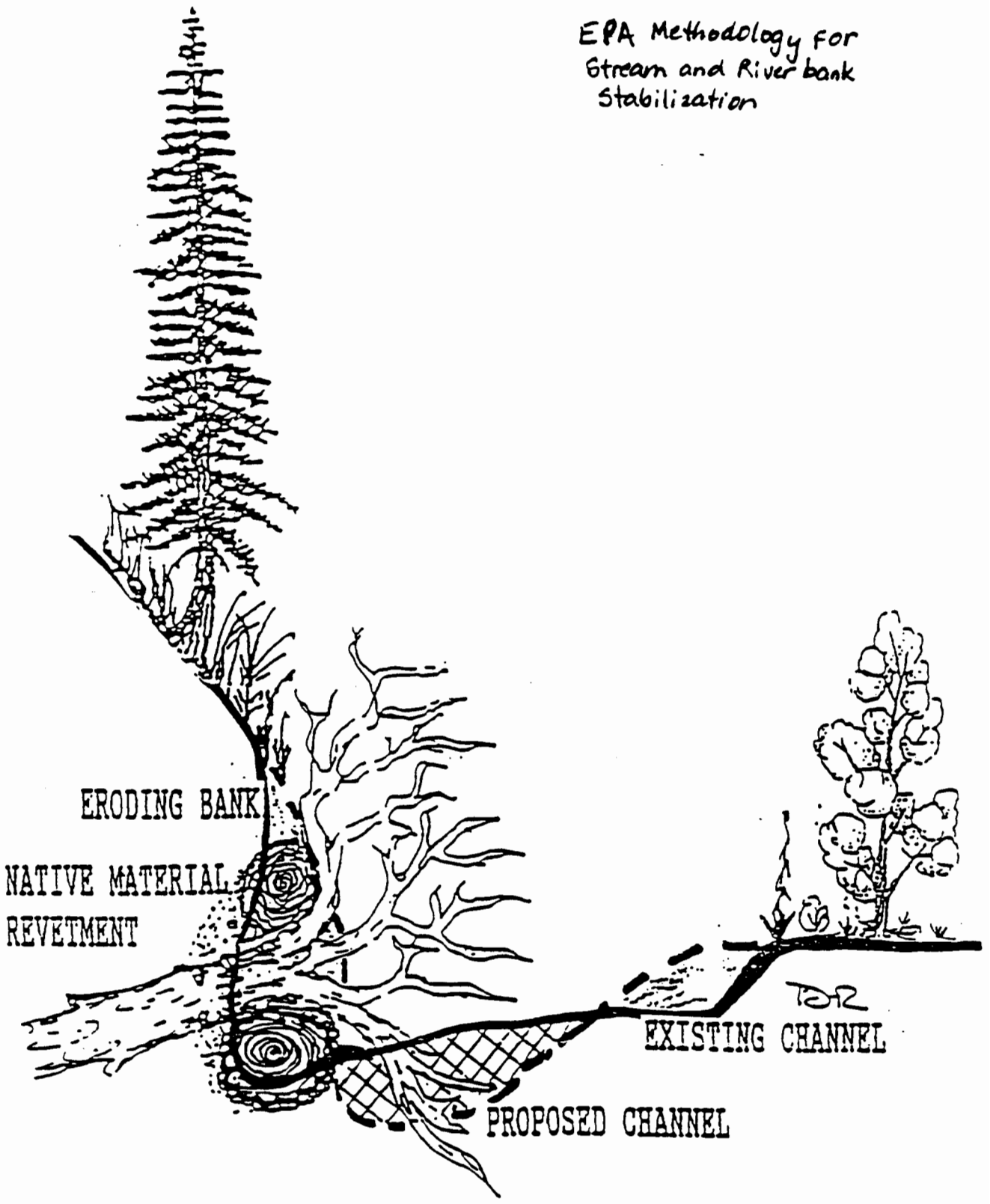
TONGUE RIVER RAILROAD COMPANY'S PROPOSED EXTENSION BETWEEN ASHLAND AND DECKER, MT

FINAL ENVIRONMENTAL IMPACT STATEMENT

APPENDIX F

EPA'S DESIGN SPECIFICATIONS FOR RIVER BANK STABILIZATION

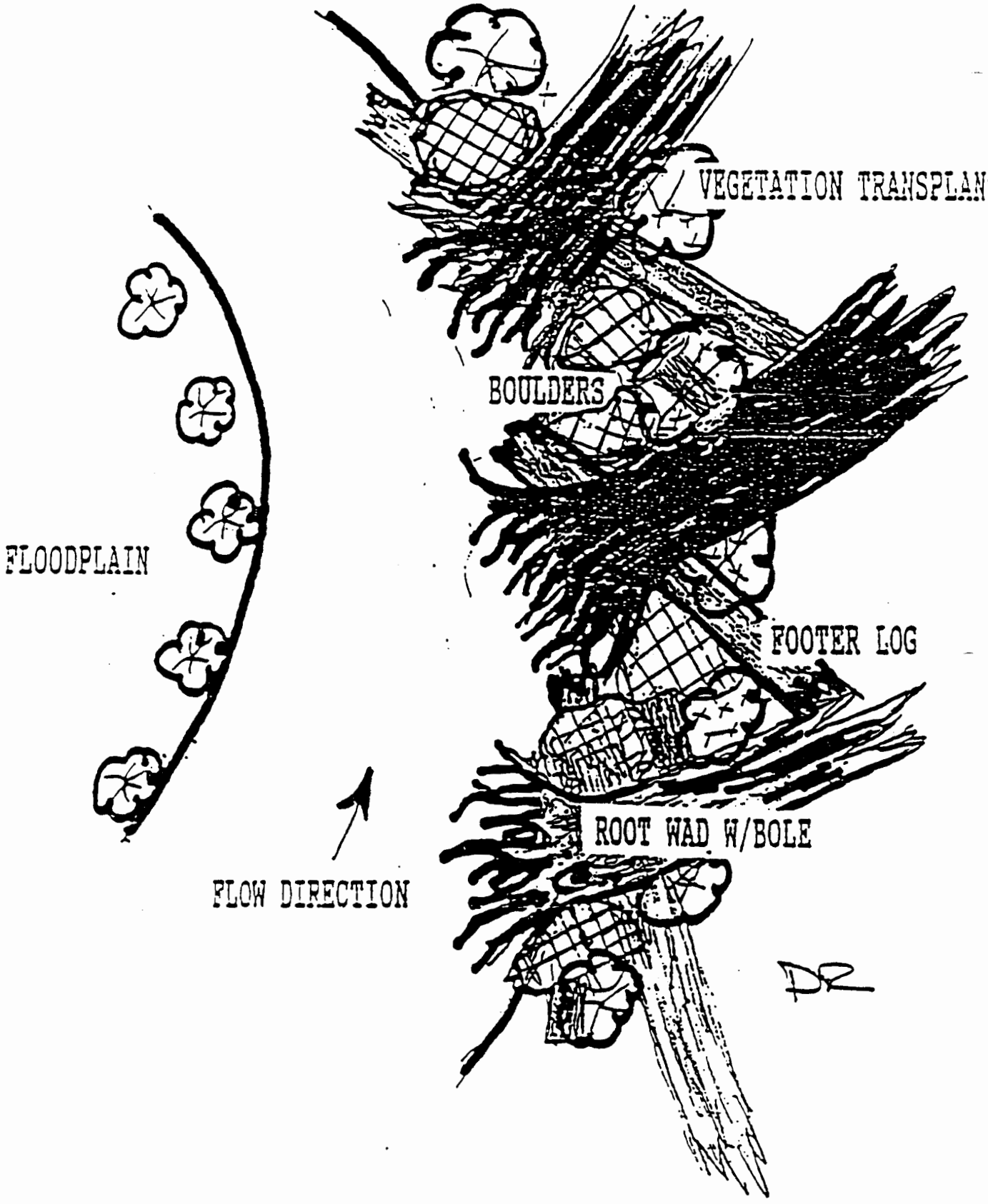
EPA Methodology for
Stream and River bank
Stabilization



DESIGN SPECIFICATION #2

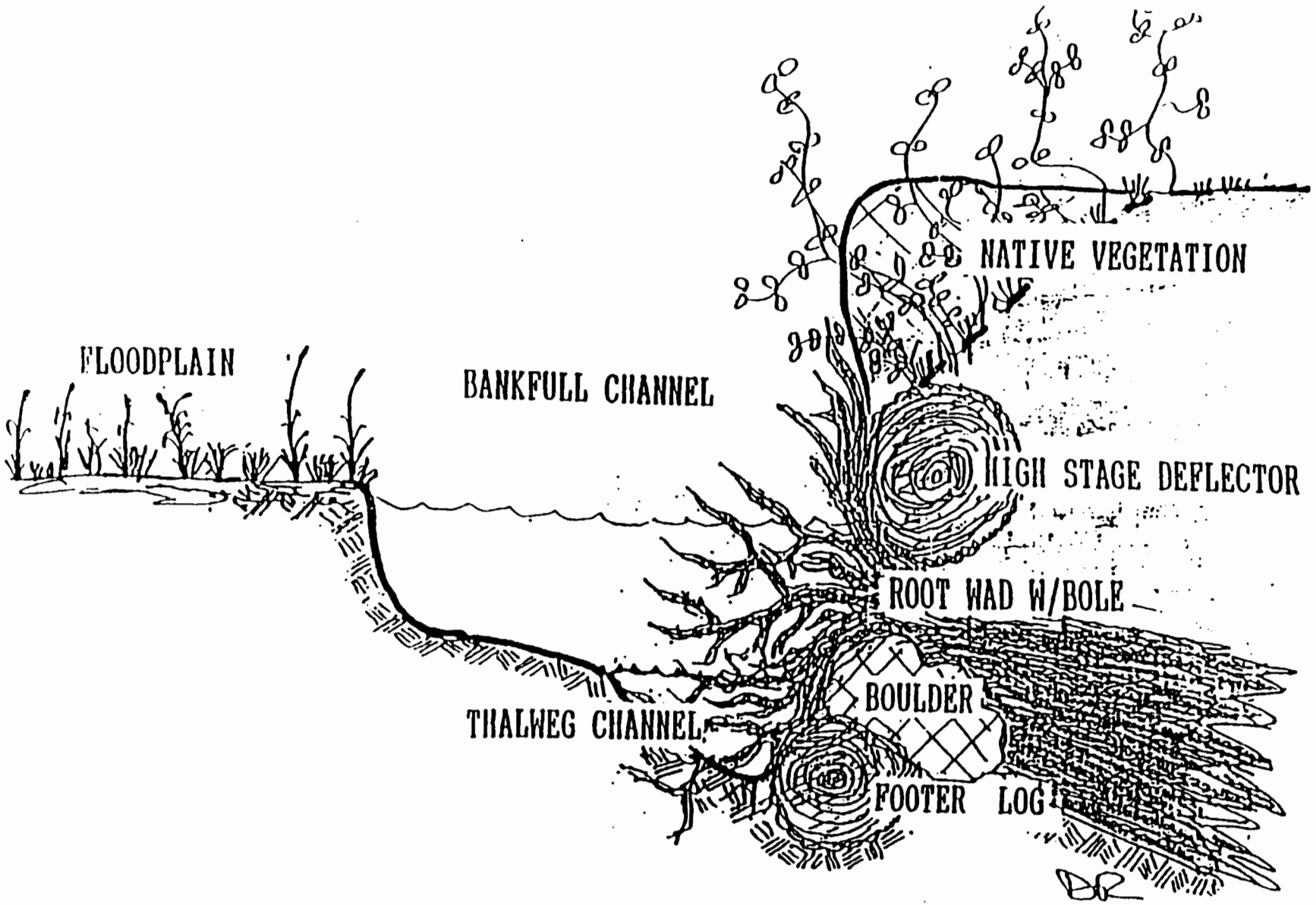
SLOPE STABILIZATION/BANK EROSION CONTROL/FISH HABITAT

Stream and Riverbank stabilization



DESIGN SPECIFICATION #3

PLANVIEW OF NATIVE MATERIAL REVETMENT



DESIGN SPECIFICATION #4
NATIVE MATERIAL REVETMENT FOR BANK STABILIZATION
AND FISH HABITAT ENHANCEMENT

Stream and Riverbank Stabilization

F.D. 30186 (SUB NO. 2)

TONGUE RIVER RAILROAD COMPANY'S PROPOSED EXTENSION BETWEEN ASHLAND AND DECKER, MT

FINAL ENVIRONMENTAL IMPACT STATEMENT

APPENDIX G

PROGRAMMATIC AGREEMENT

**PROGRAMMATIC AGREEMENT BETWEEN
THE SURFACE TRANSPORTATION BOARD,
THE MONTANA STATE HISTORIC PRESERVATION OFFICER,
AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
REGARDING CONSTRUCTION AND OPERATION OF THE
ASHLAND TO DECKER PORTION OF THE TONGUE RIVER RAILROAD COMPANY**

WHEREAS, the Surface Transportation Board (STB)[1] has determined that construction and operation of the Ashland to Decker section of the Tongue River Railroad Company may have an effect upon historic properties included on or eligible for inclusion on the National Register of Historic Places, and has consulted with the Tongue River Railroad Company (TRRC), Montana State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (Council) pursuant to Section 800.13 of the regulations (36 CFR Part 800) implementing Section 106 of the National Historic Preservation Act, 16. U.S.C. 470f (the Act); and

WHEREAS, the Northern Cheyenne Tribe, and the Bureau of Land Management, U.S. Department of Interior have participated in consultation and have been invited to concur in this Agreement;

WHEREAS, the consulting parties have considered the applicable requirements of the Act, the American Indian Religious Freedom Act, 42 U.S.C. 1996 et. seq. (AIRFA), and the Native American Graves Protection and Repatriation Act, 25 U.S.C. 3001 et. set. (NAGPRA) in the course of consultation.

NOW, THEREFORE, the stb, TRRC, SHPO, and the Council agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effects of the undertaking on historic properties.

STIPULATIONS

STB shall ensure that the following measures are carried out:

I. Identification and Evaluation of Historic Properties (Inventory Report)

a. TRRC will inventory a 200 foot-wide right-of-way (ROW), staging areas, work camps, unimproved construction access routes, and other ancillary areas related to the undertaking to identify

---

[1] The Surface Transportation Board (STB) was created with the passage of the Interstate Commerce Commission Termination Act of 1995 (Pub. L. No. 104-88). STB, an independend body within the U.S. Department of Transportation, is responsible for administering rail, pipeline, and certain adjudicatory functions involving motor and water carriers. These responsibilities are similar to those duties formerly administered by the Interstate Commerce Commission.

historic resources which may be eligible for or listed on the National Register of Historic Places. The inventory will also seek to identify historic and prehistoric sites, traditional cultural properties as defined in National Register Bulletin 38 (National Park Service 1990), historic structures, and cultural landscapes. The inventory will be completed under the supervision of persons meeting the professional qualifications standards provided in the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation, 48 FR 44716-44742 (Secretary's Standards), and in conformance with the Secretary's Standards for identification (48 FR 44720-44723).

b. A corridor one-mile wide, centered on the proposed railroad route, will be established to consider visual, audible, and atmospheric effects, as well as other indirect effects to standing structures, cultural landscapes, and properties of traditional cultural value. The width of this corridor may be adjusted to take into consideration varying topographic conditions, in consultation with the SHPO. The corridor will be subjected to an inventory, the purpose of which is the identification and evaluation of historic structures, cultural landscapes, and properties of traditional cultural value that may be affected by the undertaking.

c. The area of potential effects (APE) for the undertaking comprises those areas described in Stipulation I.a. and I.b. above.

d. Representatives of the Northern Cheyenne Tribe will be invited to participate in the inventories in order to help identify, document, and evaluate properties of spiritual and traditional cultural value to Native American. This invitation will include not only the Ashland to Decker proposed alignment but also the permitted alignment from Miles City to Ashland. The Northern Cheyenne Tribe will designate a representative(s), to accompany the cultural resource inventory crew. Tribal representatives will be included during inventory of the staked ROW, staging areas and work camps and the area of indirect affect identified as the area within one mile of the centerline of the ROW.

TRRC will ensure that the tribally designated representative(s)--including the Culture Committees from the Northern Cheyenne, Crow, Arapaho, Oglala and Miniconjou--are consulted regarding the traditional cultural significance of historical resources identified during the inventory. Traditional cultural significance will not be regarded as limited to "religious" or "spiritual" significance, but will include all aspects of significance as outlined in National Register Bulletin 38.

In addition, during the cultural resource inventory, the Northern Cheyenne representative(s) will be invited to identify and compile a list of traditionally-important plants that occur in the

APE as well as the gathering sites and access points for these plants. This information will be made available to the TRRC in order that TRRC can ensure appropriate protection for and continuing access to these plants.

e. TRRC will document the results of the inventory(s) completed and will make recommendations for eligibility for known and newly identified sites, structures, and landscapes for inclusion in the National Register of Historic Places (National Register). TRRC shall submit these results and recommendations in a report to the STB.

f. The STB shall review the inventory report and provide TRRC with recommendations for any needed revisions. Upon receipt of the inventory(s) report, the STB shall provide a copy(s) to the Northern Cheyenne Culture Committee within 30 days for their review and comment. The STB shall require the return of comments within 45 days of the Culture Committee's receipt of the copy(s).

g. Upon its approval of the report, STB will make determinations of eligibility in a manner consistent with 36 CFR 800.4(c) and pertinent guidelines of the National Park Service, Council, and SHPO, and will request SHPO's comments on these determinations. SHPO shall be afforded 30 days to review the report and provide its comments on the results and the STB's determinations of eligibility. These comments shall be taken into consideration in any final revisions to the report.

II. Consultation on Treatment (to Prepare a Treatment Plan)

a. Should any prehistoric sites, historic sites, structures, or cultural landscapes within the APE be determined eligible for inclusion in the National Register pursuant to Stipulation I.f., STB will evaluate the potential effects of the undertaking on those properties, and will consult with TRRC, SHPO and other interested parties, as appropriate, about options to mitigate or negate potential effects.

b. Should any traditional cultural property or cultural landscape of value to a Native American tribe or other ethnic group be determined eligible for inclusion in the National Register pursuant to Stipulation I.f., STB will consult with the SHPO and the Native American tribe(s) or others who ascribe value to the property about the potential effects to those properties and about options to mitigate or negate those effects. The STB will coordinate the consultation process, which shall be scheduled for completion within a 45 day period. For properties of this type that are not eligible for the National Register, STB will consult further with the applicable Native American tribe and take such actions as are feasible and prudent to advance the purposes of the American Indian Religious Freedom Act.

c. TRRC shall invite representatives of the Crow, Arapaho, Oglala, and Miniconjou to meet with their contractors and Northern Cheyenne representatives who participated in the inventory to discuss the inventory results, and how properties of traditional cultural value can most respectfully be managed with regard to this undertaking.

III. Treatment Plan (for Eligible Resources--Native American and Non-Native American)

a. STB will ensure that TRRC prepares and implements a Treatment Plan(s) that will address the effects of the proposed undertaking on historic properties and that balances the concerns of the parties to this Agreement. The plan(s) shall (1) identify all historic properties in the APE, (2) identify the nature of the effects to which each property will be subjected, and (3) identify the treatment strategies proposed to minimize or mitigate the effects of the undertaking. The treatment plan(s) will incorporate measures identified by Native American representatives as necessary for mitigation of adverse affects to properties that are determined to be significant for their traditional cultural values.

b. Whenever possible, in-place preservation shall be the preferred alternative. In consultation with STB, the SHPO, and other appropriate local agencies, TRRC shall develop specific procedures to preserve historic properties in-place. These procedures may include monitoring of historic properties by historians, archaeologists and Native American representatives.

c. Where data recovery is determined by STB in consultation with the SHPO to be the most prudent and feasible treatment option, the research design proposed in the Treatment Plan(s) shall specify, at a minimum:

1. the historic properties to be affected and the nature of those effects;

2. the research questions to be addressed through data recovery, with an explanation of their relevance and importance;

3. the fieldwork and analytical strategies to be employed, with an explanation of their relevance to the research questions;

4. proposed methods of dealing with individual discovery situations;

5. methods to be used in data management and dissemination of data, including a schedule;

6. the proposed disposition of recovered materials and records including the disposition of Native American sacred items, human remains and grave goods;

7. proposed methods for disseminating results of the work to the interested public;

8. proposed methods by which relevant Native American groups and local governments will be kept informed of the work and afforded an opportunity to participate; and

9. a proposed schedule for the submission of progress reports to the STB.

d. The data recovery plan shall be consistent with the Secretary's Standards for Archaeological Documentation (48 FR 44734-37) and take into account the Council's publication, Treatment of Archaeological Properties: A Handbook (Advisory Council on Historic Preservation 1980), subject to any pertinent revisions the Council may make in the publication prior to completion of the data recovery plan, and SHPO guidance.

e. Reports resulting from the implementation of data recovery in accord with Stipulation III.c. will be submitted to STB and SHPO for review. Upon receipt of the draft report(s), the STB shall provide a copy(s) to the Northern Cheyenne Culture Committee within 30 days for their review and comment. The STB shall require the return of comments within 45 days of the Culture Committee's receipt of the copy(s). Comments will be incorporated, as appropriate into the final report(s). TRRC will ensure that reports are responsive to contemporary professional standards, and to the Secretary's Standards for Archaeological Documentation (48 FR 44734-37). A copy of all final reports will be provided to the SHPO, STB, and Council. Upon receipt of the final report(s), the STB shall provide a copy(s) to the Northern Cheyenne Culture Committee, the Bureau of Indian Affairs, and the Bureau of Land Management within 30 days.

f. After consulting with appropriate parties, standing historic structures which cannot be avoided shall be recorded to the level of documentation prescribed by the Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) of the National Park Service. Such recordation may include a site history, photographs, measured drawings, etc. Copies of this documentation must be accepted by HABS/HAER prior to any alteration of the historic structure. Copies of the accepted documentation will be provided to the SHPO.

IV. Review of Treatment Plan

STB will submit the Treatment Plan(s) to all parties to this Agreement for a 45-day review period. If any party fails to submit their comments within 45 days of receipt, the STB shall assume their concurrence with the plan. If any party objects to the plan, or any part thereof, the STB will consult with the objecting party to resolve the objection in accordance with Stipulation IX.

V. Construction

Once STB has agreed, in consultation with other parties to this Agreement, on the adequacy of the project Treatment Plan(s), STB may allow TRRC to begin construction in those portions of the ROW that do not contain eligible historic properties. Where historic properties are present, STB may allow construction to proceed once the agreed upon data recovery fieldwork/treatment as specified in the Treatment Plan(s) is completed and approved by STB.

VI. Discovery

If a previously undiscovered archaeological, historical, or cultural property is encountered during construction, resonable efforts will be made to avoid or to minimize harm to the property until TRRC can evaluate and, if necessary mitigate impacts to the new discovery. Evaluation and mitigation will be carried out in consultation with the SHPO and STB as expeditiously as possible in accordance with 36 CFR 800.11(b)(1). The Council will be notified if eligible resources are discovered and mitigation has been undertaken.

VII. Human Remains

a. If human remains are encountered on Federal lands, STB or the appropriate Federal land management agency shall consult with Native Americans, or other appropriate groups to determine treatment and disposition measures consistent with applicable Federal and state laws (such as the Native American Graves Protection and Repatriation Act). If human remains are encountered on State or private laws, STB will ensure that they are treated according to the provisions of the Montana Human Skeletal Remains and Burial Site Protection Act.

b. TRRC will make every effort to avoid disturbing known human burial sites. Where avoidance is not possible, burials will be removed prior to construction and reinterred in accordance with reburial procedures established by applicable Federal and State law and tribal policy, and in accordance with procedures identified in the Treatment Plan(s).

c. In the case of inadvertent discovery of human remains during construction activities, STB will attempt to identify the appropriate Native American tribe(s) or other ethnic group(s) related to the burial, and consult with them over the treatment of remains in accordance with procedures identified in the Treatment Plan(s).

VIII. Curation

STB shall ensure that all records and materials resulting from identification and data recovery efforts are curated in accordance with 36 CFR Part 79, provided that materials to be returned to their owners will be maintained in accordance with 38 CFR Part 79 until their analysis is complete and they are returned.

IX. Dispute Resolution

Should any party of this Agreement object within 30 days to any actions pursuant to this Agreement, STB shall consult with the objecting party to resolve the objection. If STB determines that the objections cannot be resolved, STB shall forward all documentation relevant to the dispute to the Council. Within 30 days after receipt of all pertinent documentation, the Council will either:

1. provide STB with recommendations, which STB will take into account in reaching a final decision regarding the dispute; or

2. notify STB that it will comment pursuant to 36 CFR Part 800.6(b), and proceed to comment. Any Council comment provided in response to such a request will be taken into account by the STB in accordance with 36 CFR Part 800.6(c)(2) with reference to the subject of dispute.

Any recommendation or comment provided by the Council will be understood to pertain only to the subject of the dispute; STB's responsibility to carry out all actions under this Agreement that are not the subject of the dispute will remain unchanged.

X. Amendments

Any party to this Agreement may request that it be amended, whereupon the parties will consult in accordance with 36 CFR Part 800.13 to consider such amendment.

XI. Termination

Any party to this Agreement may terminate it by providing thirty (30) days notice, in writing, to the other parties, provided that the parties will consult during the period prior to termination to seek agreement or amendments or other actions that would avoid termination. In the event of a termination, STB will

comply with 36 CFR Part 800.4 through 800.6 with regard to this undertaking.

Execution and implementation of this Memorandum of Agreement evidences that STB has afforded the Council a reasonable opportunity to comment on construction and operation of the proposed Ashland to Decker portion of the Tongue River Railroad Company line.

SURFACE TRANSPORTATION BOARD

By:_____ Date:_____

MONTANA STATE HISTORIC PRESERVATION OFFICER

By_____ Date:_____

ADVISORY COUNCIL ON HISTORIC PRESERVATION

By:_____ Date:_____

TONGUE RIVER RAILROAD COMPANY

By:_____Date:_____

Concurrence:

NORTHERN CHEYENNE TRIBE

By:_____ Date:_____

BUREAU OF LAND MANAGEMENT, U.S. DEPARTMENT OF INTERIOR

By:_____ Date:_____

F.D. 30186 (SUB NO. 2)

TONGUE RIVER RAILROAD COMPANY'S PROPOSED EXTENSION BETWEEN ASHLAND AND DECKER, MT

FINAL ENVIRONMENTAL IMPACT STATEMENT

APPENDIX H

LIST OF PREPARERS

LIST OF PREPARERS

Preparers	Project Assignment
Elaine K. Kaiser, Chief Section of Environmental Analysis	Environmental and Legal Review
Victoria Rutson Attorney Section of Environmental Analysis	Environmental and Legal Review
Dana White Environmental Protection Specialist Section of Environmental Analysis	Environmental Review